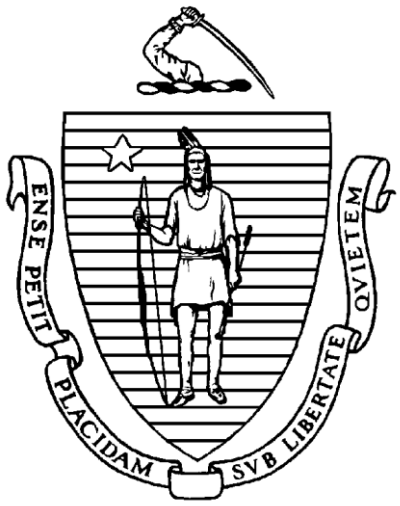


Department of Conservation and Recreation

PART I

INSTRUCTIONS TO BIDDERS

CONTRACTS FOR PUBLIC WORKS PROJECTS
AND
FOR BUILDING PROJECTS ESTIMATED TO
COST MORE THAN $25,000 BUT NOT MORE THAN $100,000
SUBJECT TO THE PROVISIONS OF M.G.L. CH. 30 SEC. 39M

NOTICE TO CONTRACTORS – M.G.L. C. 30, sec. 39M CONSTRUCTION
ADVERTISEMENT OF INVITATION FOR BIDS
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
10 PARK PLAZA, SUITE 6620, BOSTON, MA 02116
PHONE: 617-626-1250
www.mass.gov/dcr

Contract No. P26-3636-C9A
Title: Project Shade - Lake Park
Location: Quinsigamond State Park - Lake Park
283 Lake Ave., Worcester, MA 01604

GENERAL BID proposals shall be submitted on a form furnished by the Department and will be received by **12:00 PM on Thursday, December 17, 2026**, through DCR's E-bid room at www.bidexpress.com/businesses/36765/home.

Individual sets of contract documents will only be available in DCR's E-bid room at www.bidexpress.com/businesses/36765/home.

If any addenda are issued throughout the open period for this project, DCR will distribute these addenda via Bid Express, which will also email identified prospective at the time plans and specifications are issued.

A pre-bidding conference for prospective bidders will be held **Wednesday, December 2, 2026, at 10 AM.** Meet at the parking lot adjacent to the athletic field.

The project consists of the installation of (2) fabric shade canopies adjacent to the Lake Park athletic field, (1) on the east side over existing spectator bleachers, and (1) on the south side with accessible paving and paths, site furnishings, and native canopy trees.

The estimated project cost is **$137,000.00**

The work is to be accomplished within **135** calendar days of a notice to proceed. Liquidated damages in the amount of **$500.00** per day will be assessed if the work has not been completed in accordance with the provisions of the contract within the time specified (as extended by any authorized extension of time granted in accordance with the contract provisions).

Bidders must be pre-qualified by the Massachusetts Dept. of Transportation (MassDOT) Highway Division in **Recreational Facilities** to bid on the above project. An award will not be made to a Contractor who is not pre-qualified by MassDOT prior to the opening of Proposals.

The Proposed contract includes a requirement of 0% for MBE (Minority Business Enterprise) 0% for WBE (Women Business Enterprise) and 0% VOBE requirement (Veteran-Owned Business Enterprise).

The applicable local minority workforce utilization percentage is a minimum goal of 15.3%. The applicable local women workforce utilization percentage is a minimum goal of 6.9%.

Each bid must be accompanied by a bid deposit, in the form of a bid bond, cash, certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the Department of Conservation and Recreation in the amount of 5% of the bid.

Each bid must be submitted through DCR's E-Bid room at www.bidexpress.com/businesses/36765/home. Please ensure that your bid is complete and marked as responsive when submitting through DCR's Bid room. Any bids found to be incomplete and/or marked unresponsive will be rejected by DCR and will not be considered when awarding the project.

Bids are subject to the provisions of M.G.L. Ch. 30, Sect. 39F, G, H and M inclusive. Wages are subject to minimum wage rates as per M.G.L. Ch. 149, sections 26 to 27D inclusive. The Department reserves the right to waive any informalities in or to reject any and all bids if it be in the public interest to do so.

Commissioner Nicole LaChapelle
Massachusetts Department of Conservation and Recreation

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION

PART I
INSTRUCTIONS TO BIDDERS

CONTRACTS FOR PUBLIC WORKS PROJECTS
SUBJECT TO THE PROVISIONS OF M.G.L. C. 30. SEC. 39M

Awarding Authority:
Department of Conservation and Recreation
10 Park Plaza, Suite 6620,
Boston, MA 02116
Telephone: 617-626-1250

DCR Contract No.:	P26-3636-C9A
Title:	Project Shade – Lake Park
Project Scope:	The project consists of the installation of (2) fabric shade canopies adjacent to the Lake Park athletic field, (1) on the east side over existing spectator bleachers, and (1) on the south side with accessible paving and paths, site furnishings and native canopy trees.

Deadline for filing general bids is 12:00 P.M. on Thursday, December 17, 2026.

The minimum wage rate and truck rate requirements for this Contract are located www.bidexpress.com/businesses/36765/home.

Bid forms for this Contract are located @ www.bidexpress.com/businesses/36765/home.

The Minority, Women & Veterans Business Enterprise participation for this Contract are to be found in the Notice to Contractors section (Part I - Page 2/3).

The time for completion of the Work is specified in Article 2 of the Department of Conservation and Recreation - Contractor Agreement. Liquidated damages for failure to be completed on time are as stated in Article 8 of the Department of Conservation and Recreation - Contractor Agreement.

As used herein, capitalized terms shall have the meaning assigned to them in the General Conditions of the Contract and the Department of Conservation and Recreation - Contractor Agreement unless the context clearly indicates otherwise.

SECTION 1 - BIDDER'S REPRESENTATION

1.1 Each bidder (hereinafter sometimes referred to as "Bidder") by making a bid (hereinafter sometimes referred to as "Bid") represents and warrants that Bidder has visited and examined the Site and the Contract Documents; that Bidder is familiar with the local conditions under which the Work is to be performed; that Bidder has correlated personal observations with the requirements of the Contract Documents; and that where the Contract Documents require, in any part of the Work, a given result to be produced, the Contract Documents are adequate and that Bidder will produce the required result within the Bid price and that the Bid is made in accordance therewith.

1.2 FAILURE TO EXAMINE THE CONTRACT DOCUMENTS AND THE SITE WILL NOT RELIEVE ANY BIDDER FROM ANY OBLIGATION UNDER THE BID AS SUBMITTED. NEITHER THE COMMONWEALTH NOR THE DESIGNER WILL BE RESPONSIBLE FOR ERRORS, OMISSIONS AND/OR CHARGES FOR EXTRA WORK ARISING FROM BIDDER'S FAILURE TO FAMILIARIZE ITSELF WITH THE CONTRACT DOCUMENTS OR EXISTING CONDITIONS.

1.3 Pre-Bidding Conference

A. If applicable, a pre-bidding conference for prospective bidders will be held at the date, time and location as specified in the Notice to Contractors section (Part I – page 2/3).

B. At the conference, the project will be discussed in general. It is desirable that all prospective bidders attend. The Contract, Specifications, Drawings, and any other aspects of this project will be explained in response to questions by those attending. For interpretations of questions requiring legal, administrative, or engineering decision, prospective bidders shall comply with Section 3 herein.

SECTION 2 - GENERAL BIDDERS - QUALIFICATION

2.1 Every Bidder must submit the following documents, as required:

Special certification may be required as required by the Department on a contract-specific basis.

Refer to the Notice to Contractors for the specific qualification requirements of this contract.

SECTION 3 - REQUESTS FOR INTERPRETATION

3.1 Interpretation

A. The Plans and Specifications and other Contract Documents are to be considered together and are intended to be mutually complementary, so that any work shown on the Plans though not specified in the Specifications, and any work specified in the Specifications though not shown on the Plans, is to be executed by the Contractor as a part of this Contract.

B. All things that in the opinion of the Awarding Authority may be reasonably inferred from the Plans, Specifications and other Contract Documents are to be executed by the Contractor. The Awarding Authority shall determine whether the detail Plans conform to the general Plans and Contract Documents.

C. The tables of contents, titles, headings and marginal notes or sub-scripts contained herein are solely to facilitate references, are not intended to be construed as provisions of the Contract, and in no way affect the interpretation of the provisions to which they refer.

D. Where reference is made in the Contract Documents to publications, standards, or codes issued by associations or societies, such reference shall be interpreted to mean the current edition of such publications, standards, or codes, including revisions in effect on the date of the Advertisement, notwithstanding any reference to a particular date. The foregoing sentence shall not apply to the dates, if any, specified with respect to insurance policy endorsement forms.

E. In case of any conflict among the Contract Documents, unless the context clearly otherwise requires, the Contract Documents shall be construed according to the following priorities:

First Priority:	Contract Modifications
Second Priority:	Department of Conservation and Recreation - Contractor Agreement
Third Priority:	General Conditions of the Contract
Fourth Priority:	Drawings - Schedules take precedence over enlarged detail Drawings and enlarged Detail Drawings take precedence over reduced scale Drawings; figured dimensions shall prevail over scale.
Fifth Priority:	Specifications

3.2 Any questions by prospective Bidders concerning interpretation of the Contract Documents must be submitted in writing to the Awarding Authority and should be in its possession at least five working days before the date set for the receipt of Bids. The Awarding Authority will post to Bid Express any addenda or written interpretations that it deems necessary to Bidders who have taken out plans at the address given by them before the date set for the receipt of affected Bids. Bidders may not rely upon oral communications or interpretations from the Awarding Authority or the Designer, and the Awarding Authority shall not be bound by them.

Written Questions shall be submitted to:

Attn: Ginna Johnson, Project Manager
Department of Conservation and Recreation

Email: ginna.johnson@mass.gov

3.3 It is the sole responsibility of the Bidder to ascertain the existence of any addenda issued by the Awarding Authority, all addendums are posted on Bid Express- www.bidexpress.com/businesses/36765/home. Copies of addenda will be made available for inspection at the locations listed in the Advertisement where the Contract Documents are on file.

3.4 Wherever in the Contract Documents reference is made to Massachusetts General Laws, it shall be construed to include all amendments thereto effective as of the date of the issuance of the invitation to bid on the proposed work.

SECTION 4 - PREPARATION OF BIDS; ALTERNATES

4.1 Bids shall be submitted through the DCR E-Bid room at www.bidexpress.com/businesses/36765/home?agency=true.

4.2 All Bids submitted thru Bid Express must be deemed responsive by Bid Express to be considered

4.3 Where so indicated on the Bid Form, sums shall be expressed in both words and numerals. Where there is a discrepancy between the Bid sum expressed in words and the Bid sum expressed in figures, the Bid sum expressed in words shall control unless the intention of the Bidder clearly is otherwise as determined by the Awarding Authority in its sole discretion.

4.4 Each Bidder shall acknowledge all required alternates in Section C on the Bid Express by entering the dollar amount of addition or subtraction necessitated by the alternate(s).

4.5 If an alternate includes work within the Bidder's scope of work and does not involve a change in the cost of the Bid, the Bidder shall so indicate by writing "No Change" or "N/C" or "0" in the space provided for that alternate.

4.6 The lowest Bidder will be determined based on the sum of the base Bid and the accepted alternates.

4.7 Each bid must be accompanied by a bid deposit, payable to the Department of Conservation and Recreation in the amount of 5% of the bid. Bid Bonds must be submitted electronically, please ensure your company and your bonding agent's company register with one of the Bid Bond agencies affiliated with Bid Express: If you need additional assistance, please call the Bid Express Customer Support Team at 888-352-2439, available Monday - Friday from 7:00am – 8:00pm (EST). You can also email the team at support@bidexpress.com

4.8 The amount of such bid deposit shall be **5% five per cent** of the value of the Bid.

SECTION 5 - SUBMISSION OF BIDS

5.1 Each bid, **including the bid deposit,** shall be submitted via DCR's Bid room at www.bidexpress.com/businesses/36765/home?agency=true

5.2 All Bids must be received by the Awarding Authority no later than the applicable date and time specified on page 1 of these Instructions to Bidders. Any Bid not received by the applicable deadline will not be accepted.

SECTION 6 - WITHDRAWAL OF BIDS; REJECTION OF BIDS

6.1 Any Bid may be withdrawn prior to the specified deadline for the receipt of Bids provided that the withdrawal shall be made by a written request signed by a person having the authority to bind the Bidder. The written request must be hand delivered or otherwise delivered to Robert Boncore, Director of Contracts and Procurement, at 10 Park Plaza, Suite 6620, Boston, MA 02116 or through email at Robert.Boncore@Mass.Gov, and must be received on or before the date and time appointed as the deadline for the receipt of Bids.

6.2 A Bidder may withdraw its Bid without penalty at any time up to the time of Award as defined below in subsection 9.1 only upon demonstrating to the satisfaction of the Awarding Authority that a death or disability has occurred, or a bona fide clerical error or mechanical error of a substantial nature was made during the preparation of the bid. Failure to demonstrate conclusively that a bona fide clerical error or mechanical error of a substantial nature was made may result in forfeiture of the Bid deposit

6.3 The Awarding Authority reserves the right to waive any informality in or to reject any and all Bids if it is in the public interest to do so. Without limiting the foregoing, the Awarding Authority reserves the right to reject unit prices which it deems unduly high or unduly low as unbalanced.

SECTION 7 – INSURANCE

7.1 Insurance Generally

A. The Contractor shall take out and maintain the insurance coverages listed in this Section with respect to the operations as well as the completed operations of this Contract. The insurance requirements stipulated shall cover all damage to property, whether above or below ground, and shall apply to all the Work to be performed under this Contract. This insurance shall be provided at the Contractor's expense and shall be in full force and effect for the full term of the Contract or for such longer period as this Article requires.

B. All policies shall be written on an occurrence basis and be issued by companies authorized to write that type of insurance under the laws of the Commonwealth and rated in Best's Insurance Guide (or any successor thereto or replacement thereof) as having a general policy holder rating of "A" or better and a financial rating of at least "9" or otherwise acceptable to the DCR.

C. The Contractor shall submit two originals of each certificate of insurance, acceptable to the DCR, simultaneously with the execution of this Contract. Certificates shall include:

"Notwithstanding any policy terms or endorsements: DCR Contract Number /Project Name & *DCR is an additional insured as to all policies of insurance, with the exception of workmen's compensation. In addition, none of the above-referenced insurance coverages shall be cancelled, terminated, or materially modified in any way unless and until 10 (Ten) days advance written notice is given to the DCR. The contractor has paid all premiums.

The Contractor shall submit updated certificates prior to the expiration of any of the policies referenced in the certificates so that the DCR shall at all times possess certificates indicating current coverage. Certificates shall indicate contractual liability coverage, and the Contractor's Protective Liability coverage is in force. Certificates shall include specific acknowledgment that the coverage set forth in this Section 7 are included in the policies.

7.2 Types and Amounts of Insurance

Contractor's Commercial General Liability

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

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

If the Contract work includes work to be performed within fifty feet of a railroad, any exclusion for liability assumed under contract for work within fifty feet of a railroad shall be deleted.

Vehicle Liability

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

Combined Single Limit: 1,000,000.00

Worker's Compensation

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

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

SECTION 8 – MBE, WBE AND VOBE PARTICIPATION

8.1 The apparent low Bidder's compliance with the requirements of this Section 8 is a prerequisite for receiving the Award of the Contract. The MBE, WBE and VOBE participation for this Contract are as set forth on the first page of these Instructions to Bidders

8.2. The Awarding Authority reserves the right to reduce or waive the MBE or WBE participation established for this Contract upon written request made by a Bidder. Requests to reduce or waive the MBE,WBE & VOBE participation for this Contract should be received by the Awarding Authority no later than Ten (10) working days before the date set for the receipt of general Bids. **THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY REQUEST TO REDUCE OR WAIVE THE MBE,WBE & VOBE REQUIREMENTS FOR THIS CONTRACT THAT IS RECEIVED AFTER THESE DEADLINES**. Such written request must demonstrate to the satisfaction of the Awarding Authority that it is not feasible for a non-MBE or non-WBE general Bidder to meet the percentage established for this Contract based upon any or all of the following: (i) actual MBE,WBE & VOBE availability, (ii) the geographic location of the project to the extent related to MBE,WBE & VOBE availability, (iii) the scope of the work, (iv) the percentage of work available for subcontracting to MBE,WBE & VOBEs and/or (v) other relevant factors, including a **documented** inability by the prospective Bidder to obtain commitments from MBE,WBE & VOBE subcontractors sufficient to meet the MBE,WBE & VOBE requirements after having made a diligent, good faith effort to do so. All the foregoing documentation shall accompany the Bidder's request for a reduction or waiver of the MBE,WBE & VOBE participation requirements. Such documentation shall include, at a minimum, the following:

-- A list of all items of work under the Contract that the Bidder made available for subcontracting to MBE,WBE & VOBEs. The Bidder shall identify all items of work that the Bidder did not make so available and shall state the reasons for not making such work available for subcontracting to MBE,WBE & VOBEs. The Bidder shall also demonstrate that, where commercially reasonable, subcontracts were divided into units capable of being performed by MBE,WBE & VOBEs.

-- Evidence that the Bidder sent written notices soliciting Bids or proposals to perform the items of work made available by the Bidder for subcontracting to all MBE,WBE & VOBEs qualified to perform such work. The Bidder shall identify (if) each solicited, and (ii) each MBE,WBE & VOBE listed in the Massachusetts Supplier Diversity Office

("SDO" formerly "SOMWBA") directory under the applicable trade category that was not solicited and reasons, therefore. The Bidder shall also state the dates that notices were mailed and provide a copy of the written notice(s) sent.

-- Evidence that the Bidder made reasonable efforts to follow up the written notices sent to MBE,WBE & VOBEs with telephone calls or personal visits to determine with certainty whether the MBE,WBE & VOBEs were interested in performing the work. Phone logs or other documentation must be submitted.

-- A statement of the response received from each solicited person, including the reason for rejecting any MBE,WBE & VOBE who submitted a bid or proposal.

-- Evidence of efforts made to assist MBE,WBE & VOBEs that needed assistance in obtaining bonding or insurance, or lines of credit with suppliers if the inability of MBE,WBE & VOBEs to obtain bonding, insurance, or lines of credit is the reason given for the Bidder's inability to meet the requirements.

The Bidder may also submit any other information supporting its request for a waiver or reduction in the MBE,WBE & VOBE participation, including without limitation evidence that the Bidder placed advertisements in appropriate media and trade association publications announcing the Bidder's interest in obtaining bids or proposals from MBE,WBE & VOBEs, and/or sent written notification to MBE,WBE & VOBE economic development assistance agencies, trade groups and other organizations notifying them of the Contract and the work to be subcontracted by the Bidder to MBE,WBE & VOBEs. The Bidder shall also submit any other information requested by the Awarding Authority to show that the Bidder has taken all actions that could be expected to achieve the MBE,WBE & VOBE participation.

8.3 Any reduction or waiver of the MBE,WBE & VOBE participation for this Contract will be made by written addendum via Bid Express to all persons who have taken out plans for the project.

8.4 No later than five (5) working days after the opening of Bids, the apparent low Bidder shall submit the following documents to the Awarding Authority's Contract Officer listed in subsection 5.1: (i) a completed Schedule for Participation by Minority/Women Business Enterprises ("Schedule for Participation") in the form provided by the Awarding Authority showing participation in amounts equal to or exceeding the MBE,WBE & VOBE requirements for this Contract, (ii) a completed Letter of Intent in the form provided by the Awarding Authority for each MBE,WBE & VOBE listed in the Schedule for Participation, and (iii) a current SDO certification letter for each MBE,WBE & VOBE listed in the Schedule of MBE,WBE & VOBE Participation showing that the MBE,WBE & VOBE is certified in the area of work for which it is listed on the Letter of Intent.

8.5 Each Letter of Intent shall identify and describe the work to be performed by the named (the “MBE,WBE & VOBE Work”) with enough specificity to permit the Awarding Authority to identify the items of contract work that the MBE,WBE & VOBE will perform for participation credit. The Awarding Authority reserves the right to reject any Letter of Intent if the price to be paid for the MBE,WBE & VOBE Work does not bear a reasonable relationship to the value of such work under the Contract as determined by the Awarding Authority.

8.6 Within five (5) working days after receipt of the Schedule For MBE,WBE & VOBE Participation, Letters of Intent, and SDO certification letters, the Awarding Authority shall review and either approve or disapprove the apparent low Bidder’s submissions. If the apparent low Bidder has not submitted an appropriate Schedule For MBE,WBE & VOBE and appropriate Letters of Intent and SDO certification letters establishing that the MBE,WBE & VOBE participation for the project will be met, the apparent low Bidder may be considered ineligible for Award of the Contract and the Awarding Authority will Award the Contract to the second lowest Bidder, subject to said Bidder’s compliance with these conditions.

8.7 The Contractor is required to submit to the Awarding Authority signed subcontracts with all subcontractors prior to the commencement of work to be performed under these contracts, and/or a purchase order or invoice from each material supplier and/or manufacturer listed on the Schedule For MBE,WBE & VOBE Participation of the issuance of the Notice to Proceed by the Awarding Authority.

SECTION 9 - CONTRACT AWARD

9.1 "Award" means the determination, selection, and notification of the lowest, responsible, and eligible Bidder by the Awarding Authority.

9.2 The Contract will be awarded to the lowest responsible and eligible Bidder as determined by the Awarding Authority. Bidders will be required to hold firm their respective bids for thirty (30) days, Saturdays, Sundays, and legal holidays excluded, after the opening of the Bids.

9.3 As used herein, the term "lowest responsible and eligible Bidder" shall mean the Bidder whose Bid is the lowest of those Bidders who, in the Awarding Authority's opinion, are ready, willing and able to comply with all requirements of the Contract Documents and demonstrably possess the skill, ability, and integrity necessary for the faithful performance of the Work, based on the determination of past performance and financial soundness under M.G.L. c. 30, sec. 39M, (ii) the rules, regulations, orders, guidelines and policies promulgated from time to time by the Commissioner of the Department of Conservation and Recreation and (iii) any other relevant criteria that the Awarding Authority may prescribe.

9.4 The Bid price shall be the price set forth in paragaraph C of the Bid Form.

9.5 Should the Contract Documents require submission of special data to accompany the Bid, the Awarding Authority reserves the right to rule the Bidder's failure to submit such data an informality and to receive said data subsequently within a reasonable time as set by the Awarding Authority, provided that no such ruling shall result in an unfair advantage to the Bidder.

9.6 Should the Contract Documents require submission of special data to accompany the Bid, the Awarding Authority reserves the right to rule the Bidder's failure to submit such data an informality and to receive said data subsequently within a reasonable time as set by the Awarding Authority, provided that no such ruling shall result in an unfair advantage to the Bidder. **In addition,** the Department reserves the right to waive minor defects in documents or time limits

SECTION 10 - EXECUTION OF CONTRACTS

10.1 Upon receipt of the Award, the Bidder awarded the Contract shall submit two (2) properly executed originals of each of the following documents prior to execution of the Contract by the Awarding Authority. All such documents shall be in the form prescribed by the Awarding Authority and received within five working days from receipt of the Award.

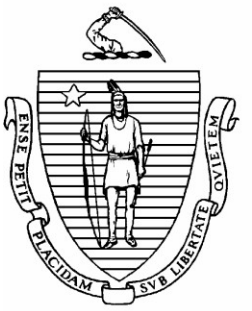
-Department of Conservation and Recreation-Contractor Agreement
-Certificate of Corporate Vote
-Joint Venture Authorization (if appropriate)
-Performance and Payment Bonds with power of attorney
-Certificates of Insurance evidencing coverages in amounts required by the Contract Documents.
-Any other documents that the Awarding Authority may require in connection with the Contractor's execution of the Contract.

10.2 Please note that no part of the Contractor's work may be subcontracted without the prior written approval of the Awarding Authority. The Contractor must complete a minimum of 51% of the scope of this contract by his own work force. If the Contractor desires to subcontract any part of the Work, the Contractor must promptly forward to the Awarding Authority a list in duplicate designating the work to be performed and the name of each proposed subcontractor. Approved subcontractors are eligible for direct payments under M.G.L. 30, sec. 39F, as amended. Material suppliers not involving site labor need not be submitted for approval.

SECTION 11 - RETURN OF BID DEPOSITS

11.1 All Bid deposits of Bidders, except those of the three (3) lowest responsible and eligible general Bidders, shall be returned within five days, Saturdays, Sundays, and legal holidays excluded, after the opening of the Bids. The Bid deposits of the three (3) lowest responsible and eligible Bidders shall be returned upon the execution and delivery of the Contract, or if no award is made; except that, if any Bidder fails to perform its agreement to execute the Contract and furnish performance and payment bonds as stated in its Bid, then said Bidder's Bid deposit shall become the property of the Commonwealth as liquidated damages; provided that the amount of the Bid deposit that becomes the property of the Commonwealth shall not exceed the difference between the Contractor's Bid price and the Bid price of the next lowest responsible and eligible Bidder; and provided further that, in the case of death, disability, bona fide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the Bidder, such Bidder's Bid deposit shall be returned.

11.2 In addition to the provisions for the return of Bid deposits as provided above, upon receipt of a Bid Bond in an amount not less than the amount of the required Bid deposit, the Awarding Authority shall return any Bid deposit of a Bidder forthwith after the public opening of Bids.



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION & RECREATION
STANDARD CONSTRUCTION CONTRACT
For Projects Subject to M.G.L. c. 149 or M.G.L. c. 30, sec. 39M

PART II

DEPARTMENT OF CONSERVATION AND RECREATION - CONTRACTOR AGREEMENT

Awarding Authority: The Massachusetts Department of Conservation and Recreation

Department Code: DCR

This agreement ("Contract") is made by and between the Commonwealth of Massachusetts, acting by and through the Awarding Authority identified above with a principal place of business at 10 Park Plaza, Suite 6620, Boston, MA 02116, and hereinafter called the "Contractor".

Terms used in this Department of Conservation and Recreation - Contractor Agreement, which are defined in the General Conditions of the Contract, shall have the meanings designated therein.

The Awarding Authority and the Contractor agree as follows:

Article 1. Scope of Work. The Work under this Contract is defined as all work required by the Contract Documents for the construction of Contract No: in accordance with and as described in the Plans and Specifications prepared by and as modified by Addenda () included herein.

Article 2. Time for Completion. The Contractor shall commence the Work under this Contract on the date specified in the written "Notice to Proceed," and shall within __Days_ after such date, bring the Work to Substantial Completion and to the point at which a Certificate of Agency Use and Occupancy may be issued, and shall bring the Work to Final Acceptance within 10 days after the date specified for Substantial Completion.

Article 3. Contract Price. The Awarding Authority shall pay the Contractor, in current funds, for the performance of the Work, subject to additions and deductions by Approved Change Order(s), the Contract Price of and Zero Cents ($.00).

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

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

Article 6. The Contract Documents: The following documents form the Contract are incorporated by reference herein, and are referred to as the "Contract Documents:"
-The Instructions to Bidders
-The General Bid submitted by the Contractor
-This Department of Conservation and Recreation – Contractor Agreement
-The General Conditions of the Contract
-The Special Conditions [Note: the term “Special Conditions" may also refer to Division 1 of the Specifications.]
-The Plans and Specifications, including Addenda identified in Article 1 above
-All Approved Change Orders issued after execution of this Department of Conservation and Recreation - Contractor Agreement

Article 7. Minority Business Enterprise, Women Business Enterprise and Veteran-Owned Business Enterprises Participation requirements and Minority/Women and Veteran-Owned Business Enterprises Workforce Utilization Percentages: The applicable requirements, if any, for minority business enterprise and women business enterprise participation, as well as those for minority and women workforce utilization percentages established for this Contract are to be found at the Notice to Contractors for this project, at Part I – Instructions to Bidders, and are incorporated by reference herein.

Article 8. Liquidated Damages. For the purposes of Article VI of the General Conditions of the Contract, liquidated damages for delay are to be found at the Notice to Contractors for this project at Part I – Instructions to Bidders and are incorporated by reference herein.

Article 9. Insurance Requirements. The insurance requirements are set forth in the Instructions to Bidders and are incorporated herein.

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

Forms Used During Contract Award and Execution

PAYMENT BOND
PERFORMANCE BOND
CERTIFICATE OF CORPORATE VOTE OF AUTHORITY
CERTIFICATE OF COMPLIANCE WITH STATE TAX LAWS AND WITH UNEMPLOYMENT COMPENSATION CONTRIBUTION REQUIREMENTS
CERTIFICATE OF LIABILITY INSURANCE
A. SEE PART I, SECTION 7 – ARTICLE 7.1 C.
B. ADDING IN THE DESCRIPTION **DCR AS ADDITIONAL INSURED**.
SCHEDULE FOR WOMEN AND MINORITY BUSINESS ENTERPRISE
LETTER OF INTENT – MINORITY AND WOMEN BUSINESS PARTICIPATION
SCHEDULE FOR VETERAN-OWNED BUSINESS ENTERPRISE
LETTER OF INTENT – VETERAN-OWNED BUSINESS ENTERPRISE
EXECUTIVE ORDER 546 – CONTRACTOR CERTIFICATION - VOBE POLICY OF THE COMMONWEALTH
EXECUTIVE ORDER 481 – CONTRACTOR CERTIFICATION - UNDOCUMENTED WORKERS POLICY OF THE COMMONWEALTH
EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE FORM
IF APPLICABLE FORM OF SUBCONTRACTOR(S)

IN WITNESS WHEREOF, said Contractor has caused these presents to be signed in its name and its behalf under seal by its officers, duly authorized to do so, and the said Commonwealth has executed these presents by the Commissioner of said Department, or its authorized agent, as prescribed by law, who shall not incur any personal liability by reason of the execution of these presents or of anything herein contained, and who hereby certifies under penalties of perjury that all applicable provisions of M.G.L. c. 149, sec. 44J, have been complied with.

(Executed in duplicate under Seal)

CONTRACTOR:

By:_____SIGNATURE & SEAL

Name: _____

Title: _____

Date: _____

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION

By: _____

Name: Nicole LaChapelle

Title: Commissioner

Date: _____

PAYMENT BOND

BOND No._____

Know all men by these presents, that

_____

as principal and_____

as surety are held and firmly bound unto the Commonwealth of Massachusetts in the sum of Dollars and Zero Cents ($.00)

in lawful money of the United States of America, to be paid to the Commonwealth of Massachusetts, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Whereas the said principal has made a Contract with the Commonwealth acting through its Department of Conservation and Recreation ("Awarding Authority") the construction of

Now the condition of this obligation is such that if the principal shall pay for all labor performed or furnished and for all materials used or employed in said Contract and in any and all duly authorized modifications, alterations, extensions of time, changes or additions to said Contract that may hereafter be made, notice to the surety of such modifications, alterations, extensions of time, changes or additions being hereby waived, the foregoing to include any other purposes or items set out in, and to be subject to, the provisions of Massachusetts General Laws, Chapter 30, Section 39A, and Chapter 149, Section 29, as amended, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

In witness whereof we hereunto set our hand and seals this___day of_____,_____

_____(Seal) _____(Seal)

(Print Name of General Contractor) (Print Name of Surety)

By_____ By _____

(Signature – Title) (Signature – Title)

Surety Address_____

_____

PERFORMANCE BOND

BOND No. _____

Know all men by these presents, that

_____

as principal and_____

as surety are held and firmly bound unto the Commonwealth of Massachusetts in the sum of and Zero Cents ($.00)

in lawful money of the United States of America, to be paid to the Commonwealth of Massachusetts, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Whereas the said principal has made a Contract with the Commonwealth acting through its Department of Conservation and Recreation ("Awarding Authority") the construction of

Now the condition of this obligation is such that if the principal shall well and truly keep and perform all the undertakings, covenants, agreements, terms and conditions of said Contract and any extensions thereof that may be granted by the Commonwealth, with or without notice to the surety, and during the life of any guarantee required under the Contract, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms and conditions of any and all duly authorized modifications, alterations, changes or additions to said Contract that may hereafter be made, notice to the surety of such modifications, alterations, changes or additions being hereby waived, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

In the event that the Contract is abandoned by the Contractor or is terminated by the Commonwealth under the provisions of said Contract, said surety shall, if requested in writing by the Commonwealth, take such action as is necessary to complete the Contract.

In witness whereof we hereunto set our hand and seals this_____day of_____, _____

_____(Seal) _____(Seal)

(Print Name of General Contractor) (Print Name of Surety)

By_____ By_____

(Signature – Title) (Signature – Title)

Surety Address _____

_____

CERTIFICATE OF CORPORATE VOTE

I hereby certify that I am the____clerk,_____assistant clerk, of

_____(the "Corporation") and that at a
(Name of Corporation)
duly authorized meeting of the Board of Directors of the Corporation held on

_____in_____at which a quorum was
(Date) (Location)
present and voting it was voted to authorize _____
(Name)
_____of the Corporation to execute
(Officer Title)
and deliver on behalf of the Corporation Contract, and to act as principal to execute bonds in connection therewith,

I further certify that_____is the duly qualified and acting
(Name of Corporate Officer)

_____of the Corporation and that said vote has not been
(Officer Title)
Repealed, rescinded, or amended.

_____
Name

_____
Print Name

_____
Date

(CORPORATE SEAL)

SUBSCRIBED AND SWORN TO THIS_____DAY OF_____, 20____BEFORE ME

_____
Notary Public

My Commission Expires: _____

CERTIFICATE OF LLC VOTE

_____, 2026

I hereby certify, warrant and represent that I am the _____of

the _____(the "LLC") and that
(Name of LLC)

I am fully and unconditionally authorized, pursuant to the Operating Agreement of the LLC to execute and deliver on behalf of the LLC a contract and all amendments thereto, and to act as principal and to execute bonds in connection therewith:

Mass. State Project No. _____

Project Title:_____

I further certify under the penalties of perjury that I,_____am the duly qualified and acting member and principal of the LLC for all purposes.
.

_____
Name

_____
Print Name

_____
Date

SUBSCRIBED AND SWORN TO THIS ____DAY OF _____BEFORE ME

_____
Notary Public
My Commission Expires: _____

CERTIFICATE OF COMPLIANCE WITH STATE TAX LAWS AND WITH UNEMPLOYMENT COMPENSATION CONTRIBUTION REQUIREMENTS

Pursuant to MGL, c. 62C, s. 49A and MGL, c. 515A, s. 29A, I,

_____authorized signatory for

_____whose principal place of business is at

_____do hereby certify

under penalties of perjury that_____has filed all

State tax returns and paid all taxes as required by law and has complied with all state laws

pertaining to contributions to the unemployment compensation fund and to payments

in lieu of contributions.

The Business Organization Social Security Number or Federal Identification Number is

_____.

Signed under the penalties of perjury the_____day of_____20_____

Signature:_____

Name and Title:_____

Schedule for Participation by Minority Business Enterprise
(To be completed and submitted within five calendar days from bid opening)

NOTE I: Participation of a Minority-owned enterprise may be counted in only one category.

Minority Business Enterprise Participation in the work

Name & address of MBE Requirement **10%**	Dollar Value of Participation	Nature of Participation
1.		
2.		
3.		
4.		
5.		
6.		

Total MBE Commitment:_____

Percentage MBE Participation (divide Total Commitment by Total Bid Price)= _____

The bidder agrees to furnish implementation reports as required by the Department to indicate the MBE(s) which it has used or intends to use. Breach of this commitment constitutes a breach of contract.

Name of bidder:_____

Date:_____By:_____

Letter of Intent – Minority Business Enterprise Participation

(To be completed by W or MBE and Submitted by the Low Bidder within five calendar days of bid opening)

Project Number: _____ MBE
Project Location:_____
To: _____
Name of General Bidder

1. My company has been certified by SDO (Supplier Diversity Office) and it has not changed its minority ownership, control, or management without notifying SDO within thirty (30) calendar days of such a change.

2. My company understands that if your company is awarded the contract, your company intends to enter into an agreement with my company to perform the activity described below for the prices indicated. My firm also understands that your firm, as General Bidder, will make substitutions and quantity changes as allowed or required by the provisions of the contract with the Commonwealth.

3. This firm understands that under the terms of Article XIII of the contract, only work **performed** by an MBE will be credited toward MBE participation requirements, and this firm **cannot assign or subcontract out any of its work** without prior written approval of the DCR Compliance Office, and that any such assignment or subcontracting will not be credited toward MBE participation requirements.

W or MBE PARTICIPATION

Contract Item	**Description of Activity** (with Notation such as "Labor Only", "Material Only", etc.)	Quantity	Unit Price	Total Amount

Total Dollar Value:_____

(Additional copies of this form shall be prepared by the Contractor in the quantity necessary to comply with the contract.)

Name of MBE
Firm_____Authorized Signature_____

Business Address_____

Print Name_____Title_____

Telephone No._____Cell:_____Date_____

Schedule for Participation by Women Business Enterprise
(To be completed and submitted within five calendar days from bid opening)

NOTE I: Participation of a Woman-owned enterprise may be counted in only one category.

Women Business Enterprise Participation in the work

Name & address of WBE 14**%**	Dollar Value of Participation	Nature Participation
1.		
2.		
3.		
4.		
5.		
6.		

Total WBE Commitment:_____

Percentage WBE Participation (divide Total Commitment by Total Bid Price) = _____

The bidder agrees to furnish implementation reports as required by the Department to indicate the WBE(s) which it has used or intends to use. Breach of this commitment constitutes a breach of contract.

Name of bidder:_____

Date:_____By:_____

Letter of Intent – Women Business Enterprise Participation

(To be completed by WBE and Submitted by the Low Bidder within five calendar days of bid opening)

Project Number: _____ WBE
Project Location: _____
To: _____
Name of General Bidder

4. My company has been certified by SDO (Supplier Diversity Office) and it has not changed its women ownership, control, or management without notifying SDO within thirty (30) calendar days of such a change.

5. My company understands that if your company is awarded the contract, your company intends to enter into an agreement with my company to perform the activity described below for the prices indicated. My firm also understands that your firm, as General Bidder, will make substitutions and quantity changes as allowed or required by the provisions of the contract with the Commonwealth.

6. This firm understands that under the terms of Article XIII of the contract, only work **performed** by a WBE will be credited toward WBE participation requirements, and this firm **cannot assign or subcontract out any of its work** without prior written approval of the DCR Compliance Office, and that any such assignment or subcontracting will not be credited toward WBE participation requirements.

W or MBE PARTICIPATION

Contract Item	**Description of Activity** (with Notation such as "Labor Only", "Material Only", etc.)	Quantity	Unit Price	Total Amount

Total Dollar Value: _____

(Additional copies of this form shall be prepared by the Contractor in the quantity necessary to comply with the contract.)

Name of WBE Firm Authorized Signature _____

Business Address _____

Print Name _____ Title _____

Telephone No. _____ Cell: _____ Date _____

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
VETERAN OWNED BUSINESS ENTERPRISE POLICY
AND CONTRACTOR CERTIFICATION

In accordance with Executive Order No. 546, it is the policy of the Commonwealth and its executive agencies to promote self-reliance among veterans by offering such veterans who own and control business enterprises the opportunity to participate in state contracting activity, as well as to assist and encourage the participation of businesses owned and controlled by veterans in all areas of state procurement contracting, including contracts for public construction, design services, and commodities and services.

The Massachusetts Executive Office of Administration and Finance has therefore established the Veteran-Owned Business Enterprise (VOBE) Program (the "Program") to oversee the inclusion of business enterprises owned and controlled by veterans in all areas of state procurement contracting, including contracts for construction, design and professional services, and commodities and services. For more information on this Order, see: http://www.mass.gov/governor/legislationeexecorder/executiveorder/executive-order-no-546.html.

DCR Requires Contractors to acknowledge this policy and the requirements as provided in the contract by signing this certification as well as the Contract Documents.

CONTRACTOR CERTIFICATION

As evidence by the signature of the Contractor's Authorized Signatory below, the Contractor certifies under the pains and penalties of perjury that the Contractor acknowledges the above-referenced policy as set forth in Executive Order 546, has read Executive Order 546, and will abide the requirements concerning the policy and order as set forth in the referenced Contract. The Contractor acknowledges that if the Contractor has not submitted an appropriate Schedule for VOBE Participation and appropriate Letters of Intent establishing that the VOBE participation requirements for the project will be met, the Contractor may not be considered eligible for Award of the Contract unless he/she requests a waiver by completing and submitting the waiver form to the Contracts Administrator/DCR and that request is approved. The Contractor also understands and agrees that a breach of any of these terms during the period of the Contract may be regarded as a material breach, subjecting the Contractor to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension and /or termination.

_____ Date:_____
Contractor Authorizing Signature

_____
Print Name

Title:_____ Telephone:_____

Cell:_____ Email:_____

Schedule for Participation by Veteran-Owned Business Enterprise

(To be completed and submitted within five (5) calendar days from bid opening)

NOTE: Participation of a Veteran-Owned Enterprise may be counted in only one category; the same participation cannot be used in computing the percentage of MBE/WBE participation.

Veteran-Owned Business Enterprise Participation in the work

Name & address of VOBE **3%**	Dollar Value of Participation	Nature Participation
1.		
2.		
3.		
4.		
5.		
6.		

Total VOBE Commitment: _____

Percent VOBE Participation (divide Total Commitment by Total Bid Price)= _____

The bidder agrees to furnish implementation reports as required by the Department to indicate the VOBE(s) which it has used or intends to use. Breach of this commitment constitutes a breach of contract.

Name of bidder:_____

Date:_____By:_____

Letter of Intent – Veteran-Owned Business Enterprise Participation

(To be completed by VOBE and Submitted by the Low Bidder within five (5) calendar days of bid opening; use and prepare extra forms as needed)

DCR Contract/ Project Number: _____

Project Location: _____

To: _____

VOBE Name of General Bidder

My company has been certified by the Department of Veterans Affairs and or Supplier Diversity Office (SDO). It has not changed its veteran ownership, control, or management without notifying the Department of Veterans Affairs within thirty (30) calendar days of such a change.

1. My company understands that if your company is awarded the contract, your company intends to enter into an agreement with my company to perform the activity described below for the prices indicated. My firm also understands that your firm, as General Bidder, will make substitutions and quantity changes as allowed or required by the provisions of the contract with the Commonwealth.
2. This firm understands that under all relevant terms of the contract, only work **performed** by a VOBE will be credited toward VOBE participation requirements, and this firm **cannot assign or subcontract out any of its work** without prior written approval of the DCR Compliance Office, and that any such assignment or subcontract will not be credited toward VOBE participation requirements.

VOBE PARTICIPATION

Contract **Description of Activity** (with Item Notation such as “Labor Only”, Quantity, Unit Price, Total Amount, “Material Only”, etc.):

Activity	Labor or Material Only?	Quantity Unit Price	Total Dollar Value

VOBE Firm Name _____

Authorized Signature _____

Printed Name _____ Title _____

Telephone No. _____ Cell No. _____

E-mail: _____ Date _____

INSTRUCTIONS:

Executive Order 481 applies to all state agencies in the Executive Branch, including all executive offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established. As it is the policy of the Executive Branch to prohibit the use of undocumented workers in connection with the performance of state contracts, all contracts entered after February 23, 2007, require that contractors, as a condition of receiving Commonwealth funds under any Executive Branch contract, make the following certification:

CONTRACTOR CERTIFICATION:

As evidenced by the signature of the Contractor's Authorized Signatory below, the Contractor certifies under the pains and penalties of perjury that the Contractor shall not knowingly use undocumented workers in connection with the performance of all Executive Branch contracts; that pursuant to federal requirements, the Contractor shall verify the immigration status of all workers assigned to such contracts without engaging in unlawful discrimination; and that the Contractor shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker(s). The Contractor understands and agrees that breach of any of these terms during the period of each contract may be regarded as a material breach, subjecting the Contractor to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

_____ Date: _____

Contractor Authorizing Signature

_____

Print Name

Title:_____ Telephone: _____

Cell:_____ Email: _____

EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE FORM

Contractor's Certificate

A contractor shall not be eligible for award of a contract unless such a contractor has submitted the following certification to the Awarding Authority, said certification shall be deemed a part of the resulting contract:

Contractor's Certification

X _____

(Contractor)

certifies that it intends to use the following listed **certification trades** in the work subject to this contract.

X _____

_____

_____

and, further, that it will comply with the minority manpower ratio and specific affirmative action steps contained herein; and will obtain from each of its subcontractors and submit to the Awarding Authority prior to the award of any subcontract under this contract, the subcontractor certification required by these bid conditions.

X _____

(Signature of authorized representative of contractor)

Subcontractor's Certification

Prior to the award of any subcontract, regardless of tier, the prospective subcontractor must execute and submit to the general contractor the following certification, which shall be deemed a part of the resulting subcontract:

_____

(Subcontractor)

certifies that: it intends to use the following listed construction trades in the work under the subcontract

_____

_____

_____

and, further, it will comply with the manpower ratio and specific affirmative action steps contained herein and will obtain from each of the subcontractors prior to the award of any subcontract under this subcontract, the subcontractor certification required by these bid conditions.

_____

(Signature of authorized representative of subcontractor)

To ensure that said subcontractor's certification becomes a part of all subcontracts under the general contract, no subcontract shall be executed unless or until an authorized representative of the Awarding Authority administering this contract has determined, in writing, that said certification has been incorporated in such subcontract, regardless of tier. Any subcontract executed without such written approval shall be void.

Exhibit A
Executive Order 504 Contractor Certification Form

BIDDER/CONTRACTOR LEGAL NAME:

BIDDER/CONTRACTOR VENDOR/CUSTOMER CODE: VC

Executive Order 504: For all Contracts involving the Contractor's access to personal information, as defined in M.G.L. c. 93H, and personal data, as defined in M.G.L. c. 66A, owned or controlled by Executive Department agencies, or access to agency systems containing such information or data (herein collectively "personal information"), Contractor certifies under the pains and penalties of perjury that the Contractor (1) has read Commonwealth of Massachusetts Executive Order 504 and agrees to protect any and all personal information; and (2) has reviewed all of the Commonwealth of Massachusetts Information Technology Division's Security Policies available at www.mass.gov/ITD under Policies and Standards.

Notwithstanding any contractual provision to the contrary, in connection with the Contractor's performance under this Contract, for all state agencies in the Executive Department, including all executive offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established, the Contractor shall:

(1) obtain a copy, review, and comply with the contracting agency's Information Security Program (ISP) and any pertinent security guidelines, standards, and policies; (2) comply with all of the Commonwealth of Massachusetts Information Technology Division's Security Policies ("Security Policies") available at www.mass.gov/ITD under Policies and Standards.

(2) communicate and enforce the contracting agency's ISP and such Security Policies against all employees (whether such employees are direct or contracted) and subcontractors.

(3) implement and maintain any other reasonable appropriate security procedures and practices necessary to protect personal information to which the Contractor is given access by the contracting agency from the unauthorized access, destruction, use, modification, disclosure, or loss.

(4) be responsible for the full or partial breach of any of these terms by its employees (whether such employees are direct or contracted) or subcontractors during or after the term of this Contract, and any breach of these terms may be regarded as a material breach of this Contract.

(5) in the event of any unauthorized access, destruction, use, modification, disclosure or loss of the personal information (collectively referred to as the "unauthorized use"): (a) immediately notify the contracting agency if the Contractor becomes aware of the unauthorized use; (b) provide full cooperation and access to information necessary for the contracting agency to determine the scope of the unauthorized use; and (c) provide full cooperation and access to information necessary for the contracting agency and the Contractor to fulfill any notification requirements.

Breach of these terms may be regarded as a material breach of this Contract, such that the Commonwealth may exercise all contractual rights and remedies, including without limitation indemnification under Section 11 of the Commonwealth's Terms and Conditions, withholding of payments, contract suspension, or termination. In addition, the Contractor may be subject to applicable statutory or regulatory penalties, including and without limitation, those imposed pursuant to M.G.L. c. 93H and under M.G.L. c. 214, § 3B for violations under M.G.L. c. 66A.

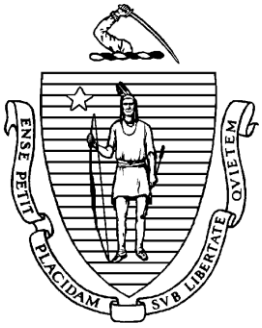
Bidder/Contractor Name: _____

Bidder/Contractor Authorized Signature: _____

Print Name and Title of Authorized Signatory: _____

Date: _____

This Certification may be signed once and photocopied to be attached to any
Commonwealth Contract that does not already contain this Certification Language and shall be interpreted to be incorporated by reference into any applicable contract subject to Executive Order 504 for this Contractor.



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION & RECREATION
STANDARD CONSTRUCTION CONTRACT

PART III

GENERAL CONDITIONS OF THE CONTRACT

FOR PROJECTS SUBJECT TO M.G.L. CH. 149 OR
M.G.L. CH. 30, SEC. 39M

TABLE OF CONTENTS

ARTICLE I: DEFINITION OF TERMS 5

ARTICLE II: EXECUTION OF THE CONTRACT, SCOPE OF WORK, INTERPRETATION OF CONTRACT DOCUMENTS 7

1. ***Execution.*** *7*
2. ***Scope of Work.*** *7*
3. ***Interpretation.*** *7*
4. ***Distribution of Work.*** *8*
5. ***Contract Price.*** *8*

ARTICLE III: CONTROL OF WORK/ADMINISTRATION OF THE CONTRACT 8

1. ***DCR.*** *8*
2. ***Right of Access to Work.*** *8*
3. ***Inspection No Waiver.*** *8*

ARTICLE IV: GENERAL PERFORMANCE OBLIGATIONS OF THE CONTRACTOR 8

1. ***Review of Contract Documents and Field Conditions.*** *8*
2. ***Supervision and Construction Procedures; Coordination; Cutting, and Patching.*** *9*
3. ***Superintendent.*** *9*
4. ***Labor.*** *10*
5. ***Notices and permits.*** *10*
6. ***Lines, Marks etc.*** *10*

7. Excavation. *10*

8. Dewatering/Hoisting/Staging. *10*

9. Corrections to the Work; Inspection No Bar to Subsequent Corrections. *11*

10. Sanitary Facilities. *11*

11. Temporary Offices. *11*

12. Telephones. *11*

13. Project Sign. *11*

14. Contract Documents and Samples at the Site. *12*

15. Safety Laws, Regulations, and Practices. *12*

16. Environmental Protection *14*

2. Dust Control. *16*

17. Debris, Excavated Material and Chemical Waste. *16*

18. Nuisances. *16*

19. Weather Protection (M.G.L. c. 149, sec. 44G and 44F(1). *17*

20. Furnishings and Equipment. *17*

21. Form for Sub-contract. *17*

22. Sales Tax Exemption and Other Taxes. *18*

23. Final Cleaning. *18*

24. Maintenance Data. *18*

25. Drainage Specifications. *18*

26. Closeout Procedures. *18*

27. Risk of Loss. *18*

28. Photographs. *18*

ARTICLE V:_____MATERIALS AND EQUIPMENT 19

1. Materials Generally. *19*

2. Shop Drawings, Product Data, and Samples. *19*

3. Tests. *20*

4. "Or Equal" Submissions. *21*

5. Delivery and Storage of Materials; Inspection. *21*

6. Defective, Damaged, or Deteriorated Materials and Rejection Thereof. *23*

7. Measurement *23*

ARTICLE VI: PROSECUTION AND PROGRESS 24

1. Beginning, Progress Schedule, and Completion of Work. *24*

2. Failure to Complete Work on Time - Liquidated Damages. *25*

3. Delays; Statutory Provisions (M.G.L. c. 30, sec. 39O). *25*

4. Occupancy and/or Use of Project Prior to Final Acceptance. *26*

5. Substantial Completion – Punch List. *26*

6. Final Acceptance of the Work. *27*

7. One-Year Warranty Repair List and Inspection. 27

ARTICLE VII: CHANGES IN THE WORK 28

1. Change Orders Generally. 28

2. Methods of Computing Equitable Adjustments. 28

3. Work Performed Under Protest. 29

4. False Claims, Statutory Provisions Regarding Changes. 30

5. Mediation. 31

ARTICLE VIII: PAYMENT PROVISIONS 31

1. Schedule of Values. 31

2. Payment Liabilities of Contractor. 31

3. Retention of Moneys by the DCR. 32

4. Applications for Payment. 32

5. Periodic Payments (M.G. L. c. 30, sec. 39K) for Building Projects. 33

6. Payment of Subcontractors (M.G.L. c. 30, sec. 39F). 34

7. Contracts for Public Works Governed by M.G.L. c. 30, sec. 39G: 37

8. Liens 38

9. Final Payment; Release of Claims by Contractor. 38

ARTICLE IX. GUARANTEES AND WARRANTIES 39

1. General Warranty. 39

2. Special Guarantees and Warrantees. 39

ARTICLE X: MISCELLANEOUS LEGAL REQUIREMENTS. 39

1. Contractor to be Informed. 39

2. Compliance with all Laws. 39

ARTICLE XI: CONTRACTOR'S ACCOUNTING METHOD REQUIREMENTS (M.G.L. c. 30, sec. 39R) 41

1. Definitions. 41

2. Record Keeping. 42

3. Statement of Management Controls. 42

4. Annual Financial Statement. 42

5. Bid Pricing Materials. 42

ARTICLE XII: EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION, AND AFFIRMATIVE ACTION PROGRAM. 43

ARTICLE XIII: GOALS FOR PARTICIPATION BY MINORITY BUSINESS ENTERPRISES AND WOMEN BUSINESS ENTERPRISES 43

ARTICLE XIV: INSURANCE REQUIREMENTS 43

ARTICLE XV: INDEMNIFICATION 43

1. Generally. 43

2. DCR's Actions. 43

3. Survival. 43

ARTICLE XVI: PERFORMANCE AND PAYMENT BONDS 44

1. Contractor Bonds. 44

2. Subcontractor Bonds. 44

ARTICLE XVII: TERMINATION OF CONTRACT 44

1. Termination for Cause. 44

2. Termination For Convenience. 45

3. Contractor's Duties Upon Termination for Convenience. 45

ARTICLE XVIII: MISCELLANEOUS PROVISIONS 45

1. No Assignment by Contractor. 45

2. Non-Appropriation. 46

3. Claims by Others Not Valid. 46

4. No Personal Liability of Public Officials. 46

5. Severability. 46

6. Choice of Laws. 46

7. Standard Forms. 46

8. No Waiver of Subsequent Breach. 46

9. Remedies Cumulative. 46

10. Notices. 46

APPENDIX A to General Conditions of the Contract 47

1. Compliance Generally. 47

2. Non-Discrimination and Affirmative Action. 47

3. Liaison Committee, Reports and Records. 48

4. Sanctions. 48

APPENDIX B to General Conditions of the Contract 50

1. Goals. 50

2. M/WBE Participation Credit. 50

3. Establishing M/WBE Status. 50

4. Subcontracts with M/WBEs. 50

5. Performance of Contract Work by M/WBEs. 51

6. Notification of Changes in M/WBE Work. 51

7. Actions Required if there is a Reduction in M/WBE Participation. 51

8. Suspension of Payment and/or Performance for Noncompliance. 52

9. Liquidated Damages; Termination. 52

10. Reporting Requirements. 53

11. Awarding Authority's Right to Waive Provisions of this Article in Whole or in Part. 53

12. Performance of contract work by SDVOBE 54-57

APPENDIX C to the General Conditions of the Contract 54

INDEX OF THE COMMONLY USED FORMS 57

CONTRACTOR'S WEEKLY WORKFORCE REPORT - 59 -

MINORITIES/WOMEN IN CONTRACTOR'S WEEKLY WORKFORCE REPORT - 60 -

WEEKLY PAYROLL REPORT FORM - 61 -

WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE - 62 -

ARTICLE I: DEFINITION OF TERMS

The following words shall have the following meanings as used in this Contract:

Advertisement: The Advertisement or Notice Inviting Bids or Proposals for the Work identified in Article 1 of the Department of Conservation and Recreation - Contractor Agreement.
Approval: (or approved): An approval in writing signed by the authorized signatory of the Awarding Authority.
As directed (As permitted, as required, as determined or words of like effect): The direction, permission, requirement, or determination of the Awarding Authority. Similarly, *approved*, *acceptable*, *satisfactory* or words of like import shall mean approved by or acceptable or satisfactory to the Awarding Authority.
Awarding Authority: The Department of Conservation and Recreation, the public agency awarding and administering this Contract, as identified in the Department of Conservation and Recreation - Contractor Agreement. Where the Awarding Authority is an agency of the Commonwealth, references to the Awarding Authority shall also include the Commonwealth and its agencies.
Building Code: All applicable rules and regulations to which the Awarding Authority is subject, and which are contained or referenced in the code authorized by M.G.L. c. 143, sec. 93 et seq., including all amendments thereto.
Change Order: (1) A written order not requiring the consent of the Contractor, signed by the Project Engineer, and designated as a Change Order, directing the Contractor to make changes in the Work within the general scope of the Contract, or (2) any written or oral order from the Project Engineer that causes any change in the Work, provided that the Contractor has given the Awarding Authority written notice stating the date, circumstances, and source of the order and that the Contractor regards the order as a Change Order.
Contract: The Contract formed by the Contract Documents as defined in Article 6 of the Department of Conservation and Recreation - Contractor Agreement.
Contract Documents: The documents listed in Article 6 of the Department of Conservation and Recreation - Contractor Agreement.
Contract Modification: Any alteration of the Contract Documents accomplished by a written agreement properly executed by the parties to this Contract.
Contract Price: The Contract Price stated in Article 3 of the Department of Conservation and Recreation - Contractor Agreement, which is the total sum, owed to the Contractor for all the Work.
DCR: The Department of Conservation and Recreation, the public agency awarding and administering this Contract.
Designer: The architect or engineer who prepared the plans and specifications for the work, identified as the Designer in Article 1 of the Department of Conservation and Recreation – Contractor Agreement.
Dispute Review Board: A panel of three experienced impartial reviewers organized and agreed upon by the DCR and Contractor. The Board members are provided with project plans and Specifications and become familiar with project procedures and participants. The Board meets on the job site regularly to encourage the resolution of disputes at the job level and renders non-binding recommendations on the resolution of the dispute.
Drawings: The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location, and dimensions of the Work, generally including Plans, elevations, sections, details, schedules, and diagrams.
Engineer: The Project Engineer, except that the term "Resident Engineer" shall have the meaning otherwise specified herein.
Final Acceptance: The written determination by the Awarding Authority that the Work has been 100% completed, except for the Contractor's indemnification obligations, warranty obligations, obligations to continue to maintain insurance coverage for the time periods provided in the Contract Documents, and any other obligations which are intended to survive Final Acceptance and/or the termination of the Contract.
General Bid: The completed bid form submitted by the Contractor in accordance with the requirements of either M.G.L. c. 149 or M.G.L. c. 30, sec. 39M.
Laws: All applicable statutes, regulations, ordinances, codes, laws, orders, decrees, approvals, certificates, and

requirements of governmental and quasi-governmental authorities.
Neutral: An impartial third party not having an interest in the Owner, DCR, the Contractor or the Project.
Notice to Proceed: The written notice provided by the Awarding Authority to the Contractor which authorizes the Contractor to commence the Work as of a date specified therein and complete the entire Work of the Contract by a date specified therein.
Or equal (or words of like import): Equal in the opinion of the Awarding Authority, determined pursuant to the provisions of M.G.L. c. 30, sec. 39M and the provisions of these General Conditions of the Contract.

Owner: The Commonwealth of Massachusetts or political subdivision thereof, authority, or other instrumentality that will own the Work.
Plan(s): Drawing(s).
Product Data: Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor or its Subcontractors and suppliers to illustrate materials or equipment for some portion of the Work. Product data also include any such information or instructions produced by the manufacturer or distributor of such materials or equipment and made readily available by said manufacturer or distributor.
Progress Schedule: The progress schedule Approved by the Awarding Authority in accordance with Article VI of these General Conditions of the Contract.
Project: The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner, the Department of Conservation and Recreation, or by separate contractors.
Project Engineer: The Awarding Authority's representative assigned to the Project.
Punch List: A list of items determined by the Awarding Authority to be minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work for its intended purpose.
Resident Engineer: The On-Site representative of the Awarding Authority.
Samples: Samples are physical examples that illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.
Schedule of Values: The schedule Approved by the DCR pursuant to Article VIII of these General Conditions of the Contract which allocates the Contract Price to the various portions of the Work and is used as a basis for payments to the Contractor.
Shop Drawings: Drawings, diagrams, details, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate a portion of the Work.
Site: The land and, if any, building(s), space within any such building(s), or other structures on which or in which the Contractor is to perform the Work.
Specifications: The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work and performance of related services.
Subcontractor: Person or entity with whom the Contractor contracts to perform the Work, except as otherwise specifically provided or required herein or by Law.
Substantial Completion: For work subject to M.G.L. c. 30 sec. 39K, "substantial completion" shall occur when (1) the Contractor fully completes the Work or substantially completes the Work so that the value of the Work remaining to be done is, in the estimate of the DCR, less than one percent of the original contract price, or (2) the Contractor substantially completes the Work and the DCR takes possession for occupancy, whichever occurs first. For work subject to M.G.L. c. 30 sec. 39G, "substantial completion" shall mean either that the work required by the Contract has been fully completed, completed except for work having a Contract Price of less than one percent of the then adjusted total Contract Price, or substantially all of the Work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work.
Superintendent: The licensed construction supervisor who is an employee of the Contractor designated to be in full-time attendance at the Site throughout the prosecution and progress of the Work and who shall have complete authority to act for the Contractor.
Work: The Work defined in Article 1 of the Department of Conservation and Recreation - Contractor Agreement, Article II, Section 2 of these General Conditions of the Contract and otherwise in the Contract Documents.
Working Hours: 7:00 a.m. to 5:00 p.m., but not more than eight hours per day, Monday through Friday, unless

otherwise specified by applicable Laws or deemed necessary by the DCR for traffic considerations or to minimize another contract impacts to the public.

All terms that this Contract defines may be used with or without initial capital letters. Other terms, abbreviations and references are defined as they appear herein. Words and abbreviations that are not defined in the Contract Documents, but which have recognized technical, or trade meanings are used in accordance with those meanings. For additional definitions of terms, abbreviations and references refer to the *Special Conditions or Specifications.*

ARTICLE II: EXECUTION OF THE CONTRACT, SCOPE OF WORK, INTERPRETATION OF CONTRACT DOCUMENTS

1. Execution.

The execution of the Department of Conservation and Recreation – Contractor Agreement by the Contractor is a representation that the Contractor has visited the Site, has become familiar with local conditions under which the Work is to be performed and has correlated personal observations with requirements of the Contract Documents.

2. Scope of Work.

The Work consists of the Work identified in the Contract Documents. The Work comprises the completed construction required by the Contract Documents and includes all labor, tools, materials, supplies, equipment, permits, approvals, paperwork, calculations, submittals, and certificates necessary to develop, construct and complete the Work in accordance with all Laws, and all construction and other services required to be supervised, overseen, performed or furnished by the Contractor or that the Contract Documents require the Contractor to cause to be supervised, overseen, performed or furnished. The Contractor shall provide and perform for the Contract Price all the duties and obligations set forth in the Contract Documents.

3. Interpretation.

A. The Plans and Specifications and other Contract Documents are to be considered together and are intended to be mutually complementary, so that any work shown on the Plans though not specified in the Specifications, and any work specified in the Specifications though not shown on the Plans, is to be executed by the Contractor as a part of this Contract.

B. All things that in the opinion of the Project Engineer may be reasonably inferred from the Plans, Specifications and other Contract Documents are to be executed by the Contractor. The Project Engineer shall determine whether the detail Plans conform to the general Plans and Contract Documents, except as may be otherwise determined by the DCR.

C. The tables of contents, titles, headings and marginal notes or sub-scripts contained herein are solely to facilitate references, are not intended to be construed as provisions of the Contract, and in no way affect the interpretation of the provisions to which they refer.

D. Where reference is made in the Contract Documents to publications, standards, or codes issued by associations or societies, such reference shall be interpreted to mean the current edition of such publications, standards, or codes, including revisions in effect on the date of the Advertisement, notwithstanding any reference to a particular date. The foregoing sentence shall not apply to the dates, if any, specified with respect to insurance policy endorsement forms.

E. In case of any conflict among the Contract Documents, unless the context clearly otherwise requires, the Contract Documents shall be construed according to the following priorities:

Priority: Contract Modifications
Second Priority: Department of Conservation and Recreation - Contractor Agreement
Third Priority: General Conditions of the Contract
Fourth Priority: Special Conditions of the Contract
Fifth Priority: Drawings -- Schedules take precedence over enlarged detail Drawings, and enlarged Detail Drawings take precedence over reduced scale Drawings; figured dimensions shall prevail over scale.
Sixth Priority: Specifications

4. Distribution of Work.
The distribution of the Work is intended to be described under the appropriate trades and, except for filed sub-bid work, may be redistributed, except as directed herein, provided that such redistribution shall cause no controversy among the trades and no delay in the progress of the Work.

5. Contract Price.
The Contract Price constitutes full compensation to the Contractor for everything to be performed and furnished in connection with the Work and for all damages arising out of the performance of the Work and/or the action of the elements and constitutes the maximum compensation regardless of any difficulty incurred by the Contractor in connection with the Work or in consequence of any suspension or discontinuance of the Work. The costs associated with the requirements of the General Conditions and any required in the Special Conditions or Specifications shall be included in the Contract Price and no direct or separate payment shall be made to the Contractor.

ARTICLE III: CONTROL OF WORK/ADMINISTRATION OF THE CONTRACT

1. DCR.
The Project Engineer shall be responsible for the general administration of the Contract. Except as otherwise specifically provided herein, the Project Engineer shall decide all questions which may arise as to the conduct, quantity, quality, equality, acceptability, fitness, and rate of progress of the several kinds of work and materials to be performed and furnished under this Contract and shall decide all questions which may arise as to the interpretation of the Plans and Specifications and as to the fulfillment of this Contract on the part of the Contractor.

2. Right of Access to Work.
The DCR, and persons designated by it, may for any purpose enter upon the Work, the Site, and premises used by the Contractor, and the Contractor shall provide safe facilities therefor. Other contractors of the DCR may also enter upon the same for the purposes which may be required by their contracts or work. Any differences or conflicts which may arise between the Contractor and other contractors of the DCR with respect to their work shall be initially resolved by the DCR.

3. Inspection No Waiver.
No inspection by the DCR or its employees or agents, and no order, measurement, certificate, approval, payment order, payment, acceptance or any other action or inaction of any of them, shall operate as a waiver by the DCR of any provision of this Contract.

ARTICLE IV: GENERAL PERFORMANCE OBLIGATIONS OF THE CONTRACTOR

The Contractor shall complete for the Contract Price all the Work in a proper, thorough, and workmanlike manner in accordance with the Contract Documents. Without limiting the foregoing and without limiting the Contractor's obligations under any other provision of the Contract Documents, the Contractor shall for the Contract Price perform the following general obligations:

1. Review of Contract Documents and Field Conditions.

A. Before commencing the Work, the Contractor shall carefully study the Contract Documents and carefully compare all Specifications, Plans, Drawings, figures, dimensions, lines, marks, scales, directions of the Project Engineer, and any other information provided by the DCR and shall at once report to the Project Engineer in writing any questions, errors, inconsistencies, or omissions.

B. Before commencing the Work, the Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents and shall at once report to the Project Engineer in writing any questions, errors, inconsistencies, or omissions.

C. Any work performed by the Contractor after the discovery of said discrepancies without the written approval of the DCR shall be at the Contractor's risk and expense.

D. The Contractor shall be responsible for all errors in the Work arising from the Contractor’s failure to comply with any of the requirements set forth in this section. The Contractor shall not be entitled to any extra compensation for any work or expense arising from or caused by his/her failure to comply with said requirements.

2. Supervision and Construction Procedures; Coordination; Cutting, and Patching.

A. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and shall have control over, construction means, methods, techniques, sequences, and procedures, and shall be responsible for coordinating all portions of the Work under the Contract.

B. The Contractor shall be responsible for the proper fitting of all work and the coordination of the operations of all trades, subcontractors, and material suppliers engaged upon the Work. The Contractor shall guarantee to each of its subcontractors all dimensions which they may require for the fitting of their work to all surrounding work. Where equipment and lines of piping are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of embedded piping and conduit included in the Work. The Contractor shall coordinate the work of any Subcontractor and prevent all interferences between the equipment, lines of piping or structural and architectural features, and avoid any unsightly arrangements in exposed work.

C. The Contractor should note that other contractors may be working on or near the Site where the Contractor's Work is being performed. The Contractor shall coordinate his/her work and the operations of all trades, subcontractors, and material suppliers engaged upon the Work so as not to interfere with or hinder the progress or completion of work being performed under another DCR contract.

D. All necessary cutting, coring, drilling, grouting, and patching required to fit together the several parts of the Work shall be done by the Contractor, except as may be specifically noted otherwise under any filed sub-bid section of the Specifications.

E. The Contractor shall be responsible to the DCR for the acts and omissions of the Contractor's employees, agents and Subcontractors, and their agents and respective contractors' employees, and other persons performing portions of the Work or supplying materials therefor.

F. The Contractor shall be responsible for the inspection of portions of the Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

G. The Contractor shall employ a registered land surveyor to perform any engineering required for establishing grades, lines, levels, dimensions, layouts, and reference points for the trades. The Contractor shall be responsible for maintaining benchmarks and other survey marks and shall replace any benchmarks or survey marks that may have become disturbed or destroyed. The Contractor shall verify the materials shown on the Drawings before laying out the Work and shall be responsible for any error resulting from its failure to exercise this precaution.

H. Unless otherwise required by the Plans and Specifications, or directed in writing by the DCR, Work shall be performed during regular Working Hours. However, if the Contractor desires to carry on the Work outside of regular working hours or on Saturdays, Sundays, or Massachusetts or federal holidays, then the Contractor shall allow ample time to allow satisfactory arrangements to be made for inspecting Work in progress and shall bear the costs of such inspection. The DCR shall bill the Contractor directly for such costs.

I. Work performed outside of regular Working Hours without the consent or knowledge of the DCR shall be subject to additional inspection and testing as directed by the DCR. The cost of this inspection and testing shall be borne by the Contractor whether the Work is found to be acceptable or not. The DCR at its election shall be entitled either to issue a credit Change Order to cover such cost or to withhold such cost from any further payments due the Contractor and/or to receive a payment from the Contractor of the amount of such cost.

3. Superintendent.

A. The Contractor shall employ a Superintendent whose appointment shall be subject to the Approval of the DCR. The Superintendent shall attend the Site full-time during the performance of the Work. The Superintendent shall represent the Contractor. Communications given to and from the Superintendent shall be deemed given to and from the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed upon written request in each case. The Superintendent shall attend each job meeting. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors.

B. The Superintendent shall be a competent employee regularly employed by the Contractor. The Superintendent shall be licensed in accordance with the Building Code, if applicable, and shall have satisfactorily performed similar duties on previous construction projects similar in type, complexity, and scale to the Project. The Superintendent's resume shall be submitted to the DCR prior to commencement of construction together with such other information as the DCR may reasonably require determining whether to Approve of his or her appointment. Any change in the Superintendent shall require the prior consent of the DCR. The Contractor shall establish an emergency telephone line by which the DCR or its agents may contact the Superintendent during non-working hours.

4. Labor.

A. The Contractor shall employ only competent workers. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. Whenever the DCR shall notify the Contractor in writing that any worker is, in the DCR's opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such employee shall be discharged from the Work and shall not again be employed on the Project except with the consent of the DCR.

B. The Contractor shall employ enough workers to carry on the Work with all proper speed in accordance with Laws, the requirements of the Contract Documents, and the Progress Schedule.

C. The Contractor shall procure materials from such sources and shall manage its own forces and the forces of its Subcontractors and any sub-subcontractors in such a manner as will result in harmonious labor relations on the Project Site. If union and nonunion workers are employed to perform any part of the Work, the Contractor shall establish and maintain separate entrances to the Site for the use of union and nonunion workers. The Contractor shall cause persons to be employed in the Work who will work in harmony with others so employed. Should the Work be stopped or materially delayed in the DCR's reasonable judgment due to a labor dispute, the DCR shall have the right to require the Contractor to employ substitutes acceptable to the DCR.

D. The Contractor shall bear the entire expense, and no separate or direct payment shall be made by the DCR, because of extra work which may be necessary because of inferior workmanship, or for specific items of work which are normally considered a part of good workmanship in completing any phase of the work.

5. Notices and Permits.

A. The Contractor at its sole cost shall take out and pay for all approvals, permits, certificates and licenses required by Laws, pay all charges and fees, and pay for (or cause the appropriate Subcontractor to pay for) all utilities required for the proper execution of the Work. All permits secured by the Contractor, complete with the application and orders of conditions, shall be kept on file in the Contractor's office and field office with copies submitted to the Project Engineer.

B. The Contractor shall comply with all Laws and shall give all notices required thereby.

C. Except as otherwise specified in this Contract, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable Laws. However, if the Contractor observes that portions of the Contract Documents are at variance with the requirements of Laws, the Contractor shall promptly notify the DCR in writing, and necessary changes shall be accomplished by an appropriate Contract Modification.

D. If the Contractor performs work knowing it to be contrary to Laws without giving such notice to the DCR, the Contractor shall bear full responsibility for such Work and all costs attributable thereto, including, without limitation, corrections to the Work.

6. Lines, Marks etc.

The Contractor shall furnish batter boards and stakes and shall cause to be placed and maintained thereon to be easily read, such lines, marks and directions relating to the Work as the Project Engineer shall from time to time direct. The Project Engineer shall establish base lines and benchmarks on the Drawings for the locations of the Work but all other lines and grades in the field shall be determined by the Contractor.

7. Excavation.

The Contractor shall prevent by sheeting and shoring or bracing, if necessary, any caving or bulging of the sides of any excavation made by the Contractor, leaving sheeting, and shoring in place, or if any is removed, filling solid the spaces left thereby.

8. Dewatering/Hoisting/Staging.

The Contractor shall provide pumping, drainage, and disposal of all water and other flows so that no puddle, nuisance, or damage will be caused by water or flooding. If pumping results in contaminated water the Contractor shall take appropriate measures to treat this water prior to discharge and shall seek appropriate permits for discharge of water. The Contractor shall provide all hoisting equipment and machinery required for the proper execution of the Work. The Contractor shall provide all exterior and interior staging required to be over eight feet in height, except as may be otherwise provided in the Contract Documents.

9. Corrections to the Work; Inspection No Bar to Subsequent Corrections.

The DCR's inspection of the Work shall not relieve the Contractor of its responsibilities to fulfill the Contract obligations. Defective work may be rejected by the DCR whether such work and/or materials have been previously overlooked or misjudged by the Resident Engineer or Project Engineer and accepted for payment. If the Work or any part thereof shall be found defective at any time before the Final Acceptance of the whole Work, the Contractor shall forthwith cease the performance of any defective work in progress and, whether such work is still in progress, shall forthwith correct such defect in a manner satisfactory to the Project Engineer. If any material brought upon the Site for use in the Work, or selected for the same, shall be rejected by the Project Engineer as unsuitable or not in conformity with the Contract Documents, or as damaged by casualty or deteriorated due to improper storage at the Site or to any other factor, the Contractor shall forthwith remove such materials from the Site. The Contractor shall pay for the cost of making good all work or property of other contractors, the Owner or of the Department of Conservation and Recreation destroyed or damaged by such removal or replacement; repair any injury, defect, omission, or mistake in the Work as soon as it is discovered; finish and immediately make good any defect, omission, or mistake in the Work; and complete and leave the Work in perfect condition.

10. Sanitary Facilities.

The Contractor shall provide and maintain sanitary facilities for all persons employed on the Work, beginning with the first worker at the Site. Said facilities shall meet the following requirements unless otherwise specified in the Special Conditions or Specifications.

A. There shall be no fewer facilities than the number required by applicable Laws.

B. Facilities shall be always kept in a clean sanitary condition and shall be adequately screened to be inaccessible to flies. (**Note:** If existing sanitary facilities at the Site are to be used by the Contractor, this requirement will be modified accordingly in the Special Conditions or Specifications.)

11. Temporary Offices.

A. Contractor's Field office. The Contractor shall erect a temporary field office at or near the Site of the Work at which the Contractor's authorized representative shall be always present while the Work is in progress. Instructions, notices, and other communications delivered there by the DCR shall be deemed delivered to the Contractor. The Contractor shall adequately furnish and maintain this office in a clean, orderly condition.

B. Resident Engineer's Office. The Contractor shall erect an Office for the Resident Engineer if, and as required by the Special Conditions or Specifications of the Contract.

12. Telephones.

A. The Contractor shall provide and maintain telephone service in the Contractor's field office. The Contractor shall pay for all calls and costs relating to this service. The DCR and its employees and authorized agents shall always be allowed the use of this telephone service without charge. Telephone service and equipment shall meet the requirements, if any, of the Special Conditions or Specifications.

B. The Contractor shall also provide and maintain telephone service in the Resident Engineer's Office, when the Contractor is required to erect such office, for the use of the DCR and its employees and authorized agents. The Contractor shall pay for all calls and costs relating to this service. Telephone service and equipment shall meet the requirements, if any, of the Special Conditions or Specifications.

13. Project Sign.

A. The Contractor shall furnish and erect at a suitable location, Approved by the Project Engineer, at the start of the work, a sign having dimensions of at least eight (8) feet long by four (4) feet high, bearing the words: Massachusetts Department of Conservation and Recreation. Also included may be the project title, expected completion date, and facility name.

B. The Contractor shall submit the design of the sign to the Project Engineer for review and approval prior to posting.

14. Contract Documents and Samples at the Site.

The Contractor shall maintain at the Site for the use and information of the DCR one record copy of the Drawings, Specifications, Addenda, Change Orders, Approved Shop Drawings, Product Data, Samples, updated Progress Schedule, and all other submittals, all in good order and marked currently to record changes and selections made during construction. These shall be available to the DCR and shall be delivered to the DCR upon completion of the Work.

15. Safety Laws, Regulations, and Practices.

A. The Contractor shall comply with all health and safety Laws applicable to the Work. Without limitation,
(1) If the Contractor uses or stores toxic or hazardous substances it shall comply with M.G.L. c. 111F, sec. 2, the "Right to Know" law and regulations promulgated by the Department of Public Health, 105 CMR 670, the Department of Environmental Protection, 310 CMR 33, and the Department of Labor and Workforce Development, 441 CMR 21; and shall post a Workplace Notice obtainable from the Department of Labor and Workforce Development.
(2) The Contractor shall comply with the Federal Resource Conservation and Recovery Act, the Federal Comprehensive Environmental Response, Compensation and Liability Act, M.G.L. c. 21C, M.G. L. c. 21E, and any other Laws affecting toxic or hazardous materials, solid, special, or hazardous waste (collectively "Hazardous Materials Laws"). Should the Contractor discover unforeseen materials subject to Hazardous Materials Laws at the Site, the Contractor shall immediately notify the DCR of such discovery.
(3) The Contractor shall be responsible for the location of all utilities in connection with the Work. Without limiting the foregoing, the Contractor shall comply with Dig Safe Laws. Dig Safe is the Utility Underground Plant Damage Prevention System established pursuant to M.G.L. c. 164, sec. 76D. This System is operated by Dig Safe Systems, Inc., located at 331 Montvale Avenue, Woburn, MA 01801, whose toll-free telephone number is 1-888-DIG-SAFE (1-888-344-7233). The Contractor shall notify Dig Safe of contemplated excavation, demolition, or explosive work in public or private ways, and in any utility company right of way or easement, by certified mail, with a copy to Department of Environmental Protection (DEP). This notice shall be given at least 72 hours prior to the work, but not more than sixty days before the work is to be done. Such notice shall state the name of the street or the route number of the way and shall include an accurate description of the location and nature of the proposed work. Dig-Safe is required to respond to the notice within 72 hours of receipt by designating the location of pipes, mains, wires, or conduits at the Site. The Contractor shall not commence work until Dig-Safe has responded. The work shall be performed in such manner and with reasonable precautions taken to avoid damage to utilities under the surface at the work location. The Contractor shall provide the Superintendent with current Dig-Safe regulations, and a copy of M.G.L. c. 82, sec. 40. Any costs related to the services performed by Dig-Safe shall be borne by the Contractor.
(4) The Contractor shall comply with Public Law 92-596, "Occupational Safety and Health Act of 1970" (OSHA), with respect to all rules and regulations pertaining to construction, U.S. Code Title 29, sections 651 et seq. including Volume 36, numbers 75 and 105 of the Federal Register as amended, and as published by the U.S. Department of Labor.
(5) The Contractor shall comply with M.G.L. c. 149, sec. 129A, relative to shoring and bracing of trenches.

B. The Contractor shall take reasonable precautions to prevent damage, injury, or loss to persons (whether under his management, DCR staff, or the public) or property. Nothing herein shall relieve Subcontractors of their responsibility for the safety of persons and property, and for compliance with all Laws applicable to the Work and their activities in connection therewith. Without limitation, the Contractor shall take all reasonable precautions for the safety of, and the prevention of injury or damage to (1) all agents and employees and contractors on the Work and all other persons who may be affected thereby including the general public, (2) all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the Site, under the care custody or control of the Contractor or any of its Subcontractors or any contractors directly or indirectly contracting through any of them, and (3) other property at the Site or adjacent thereto, including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of the Work. The Contractor shall promptly remedy all damage or loss to any such property caused in whole or in part by the Contractor, any Subcontractor, or anyone directly or indirectly contracted or employed by any of them or by anyone for whose acts any of them may be liable. Without limiting the foregoing, the Contractor shall:
(1) post and maintain adequate danger signs and other warnings against hazards.
(2) promulgate safety regulations and give appropriate notices to the DCR and users of adjacent utilities and property.

(3) ensure the adequate strength and safety of all scaffolding, staging and hoisting equipment, temporary shoring, bracing, and tying.
(4) protect adjoining private or public property.
(5) provide barricades, temporary fences, and covered walkways required by prudent construction practices, Laws and/or the Contract Documents.
(6) furnish approved hard hats and other personal protective equipment, furnish approved first aid supplies, furnish the name of the first aid attendant, and maintain a posted list of emergency facilities.
(7) provide proper means of access to property where the existing access is cut off by the Contractor, including maintaining traffic over, through or around the Work included in this contract, with the maximum safety, and practicable convenience to such traffic suspended temporarily.
(8) maintain from the beginning of any darkness or twilight through the whole of every night sufficient lights on or near any obstruction to guard or protect travelers from injury from such obstruction.
(9) maintain adequate security at the Site so as not to expose the Work, the materials to be incorporated in the Work, DCR's materials stored or otherwise located upon the Site, and surrounding property to vandalism or malicious mischief.
(10) provide adequate fire protection procedures during the use of cutting torches, welding equipment, plumbers' torches and other flame and spark producing apparatus.
(11) take prompt action to correct any dangerous or hazardous conditions.

C. Use of Explosives: The use of explosives will not be permitted in the Work unless specifically authorized in the technical Specifications, Special Conditions and/or Drawings or approved by the DCR in writing. If such approval is given, the Contractor shall comply with all Laws and obtain all permits, approvals, and certificates required in connection with the same and shall exercise best efforts, including but not limited to the employment and supervision of properly qualified personnel, to prevent damage, injuries, and accidents involving said explosives.

D. Written notice shall be given by the Contractor to all public service corporations or officials owning or having charge of public or private utilities of his/her intention to commence operations affecting such utilities at least seventy-two (72) hours exclusive of Saturdays, Sundays, and legal Holidays in advance of the start of such operations, and the Contractor shall at the same time file a copy of said notice with the DCR.

E. When necessary, the Contractor shall cooperate with representatives of public service companies to avoid damage to their structures by furnishing and erecting suitable supports, props, shoring or other means of protection. Fire hydrants adjacent to the work always shall be readily accessible to fire apparatus and no materials or other obstructions shall be placed within a radius of 10 feet of a fire hydrant.

F. Although the drawings may indicate the approximate location of existing subsurface utilities in the vicinity of the work, the accuracy and completeness of the information is not guaranteed by the DCR. Before commencing any work, or operations which may endanger or damage any subsurface structures, the Contractor shall carefully locate all such structures and conduct his/her operations in such manner as to avoid damage thereto. He/she shall not interrupt live services until new services have been provided. All abandoned services shall be plugged or otherwise made secure.

G. If the Contractor wishes to have any utilities temporarily relocated for his/her convenience, other than those specified by DCR, he/she shall submit such a request in writing to the Project Engineer. If the DCR approves this request, the Contractor shall pay for the cost of the relocation at his/her sole expense.

H. Land monuments and property markers shall be carefully protected. If is necessary to remove land monuments and/or property markers to perform the contract Work, the Contractor shall do so only at the DCR's direction and after an authorized agent of the DCR has referenced their location.

I. The Contractor shall not injure or remove trees or shrubs without authorization from the DCR.

J. Disturbance of damage to any above- or below-ground structures, conduits, cables, or the like, caused by any act of omission, neglect or misconduct in the execution or non-execution of work thereof by the Contractor shall be repaired, and/or replaced by the Contractor to the satisfaction of the DCR and at no additional expense to the DCR.

K. Disturbance or damage to any structure shall be replaced or repaired by the Contractor to the satisfaction of the DCR and at no additional expense to the DCR.

L. The Contractor shall receive no extra compensation for protection and restoration of property unless said compensation is authorized in writing by the DCR, as specified under Article VI I of the Contract General Conditions.

M. The Contractor shall not permit cutting or welding in or immediately adjacent to existing property of the Department of Conservation and Recreation or of anyone else without the DCR's prior approval in each instance.

N. The Contractor shall designate by notice to the DCR a responsible member of its organization at the Site whose duties shall include preventing accidents.

O. The Contractor shall submit to the DCR without delay verbal and written reports of all accidents involving bodily injury or property damage arising in connection with the Work.

P. In any emergency affecting the safety of persons or property the Contractor shall immediately act in the exercise of reasonable judgment to prevent threatened damage, injury, or loss. The Contractor shall immediately notify the DCR of such emergency.

16. Environmental Protection

A. The DCR shall secure the required environmental permits required under M.G.L. Chapters 131 and 91, including the National Pollutant Discharges Elimination System (NPDES) Construction General Permit and those issued by the Army Corps of Engineers under Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). The Contractor is obligated to conform to all the requirements of the permits and subsequent requirements issued by the governing agencies.

B. Contractors operating under a DEP permit shall post on the Site a sign in a format consistent with that enclosed.

C. Prevention of Water Pollution:

1. The Contractor shall take such precautions in the conduct of the Work as may be necessary to avoid contaminating water in adjacent watercourses, water resources or wetlands. All earthwork, moving of equipment, water control for excavation or foundation areas, and other operations likely to create silting shall be conducted to avoid pollution of watercourses, water resources and wetlands.
2. Erosion Control: The Contractor shall utilize such methods as may be necessary to effectively prevent erosion and sediment from entering nearby waterways.
3. Control of Surface Water Runoff: The Contractor shall keep the rate of runoff from the Site at a minimum, and control it by constructing diversion ditches, trenches, and berms, and taking any other necessary action to retard and divert runoff to protect watercourses. The Contractor shall inspect said Site controls regularly, after significant storm events (greater than one-half inch over a 24-hour period) and in accordance with a site-specific storm water pollution prevention plan (SWPPP) prepared by the Contractor. The Contractor shall repair any damage to Site controls to prevent discharge of sediments or pollutants.
4. The Contractor shall construct silt retention basins in areas of the Work adjacent to streams, or rivers, as directed by the DCR. These basins shall be removed upon completion of the Work. Water used during the Work which has become contaminated with oil, bitumen, harmful or objectionable chemicals, sewage or other pollutants shall be discharged in accordance with all Laws to avoid affecting nearby waters.
5. Under no circumstances shall the Contractor discharge pollutants into any watercourse, water resource, or wetland. When water from adjacent natural sources is used in the contract work, intake methods shall be such as to avoid contaminating the source of supply.

D. Protection of Land Resources

1. Prevention of Landscape Defacement: The Contractor shall not deface, injure, remove, cut, or destroy trees or shrubs, without authority from the DCR. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically approved by the DCR. Where such activity is permitted, the Contractor shall adequately wrap the tree with burlap or rags over which softwood slats shall be tied. The Contractor shall be responsible for any damage resulting from such use. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by equipment, dumping, or other operations, the Contractor shall protect such trees by placing boards, planks or approved protective fencing around them.
2. Restoration of Landscape Damage: Any trees or other landscape feature scarred or damaged by equipment or operations shall be restored as nearly as possible to the original condition, as approved by DCR. All trimming or pruning shall be performed in an approved manner by licensed arborists with saws or pruning shears. Trimming with axes will not be permitted.
3. Plant Pest Control: If the Work under this contract requires the use of soil moving equipment in an area with plant infestation, the Contractor shall be subject to applicable plant quarantine regulations. In general, these regulations require the thorough cleaning of soil from equipment before such equipment is moved from regulated areas to area's noninfected

E. Noise Control: The Contractor shall use every effort and every means possible to minimize noise caused by his/her operations which the DCR may consider objectionable. Each Contractor shall provide working machinery and equipment designed to operate with the least possible noise, and when gearing is used, such gearing shall be of a

type designed to reduce noise to a minimum. Compressors shall be equipped with silencers on intake lines. All gas or oil operated equipment shall be equipped with silencers or mufflers on intake and exhaust lines. Electricity shall be used for power to reduce noise. Dumping bins, hoppers and trucks used for disposal of excavated materials shall be lined with wood or other sound-deadening material if required. Where required by agencies having jurisdiction, certain noise-producing work may have to be performed during specified periods only.

E. Air Pollution Control: The Contractor shall conduct his/her operations to comply with all Laws pertaining to air pollution, including Section 142B of Chapter 111 of the Massachusetts General Laws.

1. Diesel Equipment Emission Controls

a.) All motor vehicles and construction equipment shall comply with all pertinent local, state, and federal regulations covering exhaust emission controls and safety.

b.) All Contractor and Sub-Contractor diesel-powered non-road construction equipment with engine horsepower (HP) ratings of 50 and above, which are used on the Project Site for a period more than 30 calendar days over the course of the construction period on the Project Site, shall be retrofitted with Emission Control Devices to reduce diesel emissions.

c.) The reduction of emissions of volatile organic compounds (VOCs); carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment shall be accomplished by installing Retrofit Emission Control Devices.

d.) Acceptable Retrofit Emission Control Devices for the Project shall consist of oxidation catalysts that are (1) included on the US Environmental Protection Agency (EPA) *Verified Retrofit Technology List* and/or the California Air Resources Board (CARB) *Currently Verified Technologies List*; and (2) are verified by EPA, CARB, or certified by the manufacturer to provide a minimum emissions reduction of 50 percent for VOCs, 40 percent for CO and 20 percent for PM. Attainment of the required reduction in PM emissions can also be accomplished by using less polluting Clean Fuels. Verified technologies can be identified on the following websites:

EPA: http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm

CARB: http://www.arb.ca.gov/diesel/verdev/verifiedtechnologies/cvt.htm

e.) The emission control equipment can be procured through the Statewide Contract #VEH71 that has fixed costs associated with retrofitting of diesel emission control devices.

f.) Construction shall not proceed until the Contractor has submitted a certified list of the non-road diesel-powered construction equipment subject to this provision which either are or will be retrofitted with emission control devices. The list shall include (1) the equipment number, type, make, and Contractor/Sub-Contractor name; and the emission control device make, model, and EPA verification number. Contractors shall also submit a receipt or other documentation from a manufacturer or installer that verifies that appropriate equipment has been installed. The Contractor shall also identify any vehicles that will use Clean Fuels. Equipment that has been retrofitted with an emission control device shall be stenciled or otherwise clearly marked as "Low Emission Equipment".

g.) The Contractor shall submit monthly reports, updating the same information stated in Paragraph f above, including the quantity of Clean Fuel utilized. The addition or deletion of non-road diesel equipment shall be indicated in the report.

h.) The Contractor shall use methods to control nuisance odors associated with diesel emissions from construction equipment including but not limited to the following: (1) turning off diesel combustion engines on construction equipment not in active use and on trucks that are idling for five minutes or more; and (2) locating diesel equipment away from the public and sensitive receptors.

i.) All costs associated with implementation of the diesel equipment emissions control shall be borne by the

respective Contractor or subcontractor and included in their cost for performing the work of the Contract.

2. Dust Control.

A. The Contractor is placed on notice that blowing dust from un-stabilized earth areas of the work under his/her control will be considered a nuisance. He/she shall, by spraying with water or by other approved means, dampen the soil to hold down the dust. The use of calcium chloride as a wetting agent will not be permitted. During working hours and before leaving the work for the evening, for weekends, or for a more extended period, the Contractor shall assess the moisture content of the soil and dampen it to the extent necessary to hold down the dust. While work is suspended, he/she shall return to work, if so, directed by the DCR, to maintain the dust control.

17. Debris, Excavated Material and Chemical Waste.

A. The Contractor shall not permit the accumulation of interior or exterior debris. The Contractor shall always keep the Work area clean. Without limitation, garbage shall be removed daily. Where no disposal area is shown on the Drawings, the Contractor shall remove and legally dispose of all materials off land owned by the Commonwealth to a location approved by the DCR. Documentation certifying proper disposal shall be submitted to the DCR.

B. The Contractor shall, at his/her own expense, and in accordance with all Laws, arrange for the waste of materials from excavations that are unacceptable for use in the refill or that are more than the refill materials required, in spoil banks off the lands owned by the Commonwealth of Massachusetts. Materials, if any, which cannot be placed at once in permanent positions may be deposited in storage piles at locations designated, but materials re- excavated from such storage piles shall not again be paid for as excavation.

C. The Contractor shall properly classify and remove debris and waste from the Site and transport and dispose of it, all in accordance with Laws, employing a qualified and properly licensed transporter, at any landfill, disposal or recycling facility licensed under applicable Laws, including without limitation, hazardous materials laws. The Contractor shall make all arrangements and give and obtain all notices, communications, documentation, permits, certificates, and approvals necessary for said disposal from the owner or officials in charge of such landfills, disposal, or recycling facilities. The Contractor shall bear all fees and costs in connection with such classification, removal, transportation, disposal, and storage, except as otherwise specifically provided or required by the Special Conditions or other Contract Document. The Contractor shall not permit any storage of debris or waste except in accordance with Laws.

D. The Contractor shall not permit any open fire on the Site.

E. Chemical Waste: Chemical waste shall be identified and labeled properly, stored in appropriate Department of Transportation approved containers in a secure location, removed from the Site, and disposed of not less frequently than monthly unless more frequently required by Laws, including without limitation hazardous materials laws, or by the Special Conditions or Specifications. Disposal of chemical waste shall be performed in accordance with requirements of the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Stockpiles of contaminated soils will be placed on a protective surface and covered to prevent migration or erosive loss by wind or water. Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants shall be disposed of in accordance with procedures meeting all applicable Laws. The Contractor shall immediately notify the DCR of any hazardous materials release large enough to require reporting under applicable Laws. The Contractor shall be responsible for immediately containing and cleaning up in accordance with Laws any oil or hazardous materials releases resulting from his/her operations. Any costs incurred in cleaning up any such releases shall be borne by the Contractor.

18. Nuisances.

The Contractor shall strictly prohibit and take all necessary measures to prevent the committing of nuisances on the land of the Commonwealth and adjacent properties.

19. Weather Protection (M.G.L. c. 149, sec. 44G and 44F(1).

A. For all building projects, the Contractor shall furnish and install "weather protection," which means temporary protection of that Work adversely affected by moisture, wind and cold. Weather protection shall be achieved by covering, enclosing and/or heating working areas such that a minimum temperature of 40 degrees Fahrenheit is maintained at the working surface during the months of November through March to permit construction to be carried on during such period in accordance with the Progress Schedule. After the building or portion thereof is completely enclosed by either permanent

construction or substantial temporary materials having a resistance comparable to the specified permanent construction, the Contractor shall provide heat therein of not less than 55 degrees Fahrenheit nor more than 75 degrees Fahrenheit. The foregoing provisions do not supersede any specific requirements for methods of construction, curing of materials and the like. Concrete, masonry, plaster, and all other materials that require special considerations in temperatures below 40 degrees Fahrenheit shall be installed, applied, and cured in accordance with the specific requirements for cold weather protection as defined in the project specifications.

B. The general contractor may, with the approval of the Engineer, elect to utilize the permanent heating system for temporary heat after the building is enclosed and after it has been tested and ready to operate. It shall, however, be his responsibility to thoroughly clean and restore to first-class condition any portion of the permanent heating system used for heating during construction to the satisfaction of the Engineer.

C. The Contractor shall furnish and install one thermometer for every 2,000 square feet of floor space or fraction thereof.

D. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate fire protection devices. Approved methods of heating should also provide for adequate ventilation to prevent exposing people and materials to carbon monoxide, carbon dioxide and other noxious fumes.

E. Within 30 calendar days after the award of this contract, the general contractor shall submit in writing to the Engineer three (3) copies of his proposed methods for "Weather Protection" for approval.

F. The Contractor shall give adequate notification to the Engineer and all subcontractors prior to the erection and removal of temporary protective enclosures.

G. Such weather protection shall be consistent with the Progress Schedule, shall permit the continuous progress of the Work necessary to maintain an orderly and efficient sequence of construction operations and shall meet such additional requirements as may be specified by the Special Conditions or Specifications.

20. Furnishings and Equipment.

When, in the opinion of the DCR, any portion of the Work is in a reasonable condition to receive fittings, furniture, or other property of the Department of Conservation and Recreation not covered by this Contract, the Contractor shall allow the DCR to bring such fittings, furniture, and/or other property into such portions of the Work and shall provide all reasonable facilities and protection thereof. No such occupancy shall be construed as interfering with the provisions relating to time of completion, or as constituting an acceptance of the whole or any part of the Work. Any furniture or fittings so installed shall be placed in the Work at the risk of the DCR except that the Contractor shall be liable for damages or losses to such furniture or fittings to the extent such damages or losses arise in whole or in part from the negligence or intentional misconduct of Contractor, Subcontractors, their agents and/or employees, or anyone for whose acts the Contractor is responsible.

21. Form for Sub-contract.

The Contractor when subcontracting with sub-bidders filed pursuant to M.G.L. c. 149, sec. 44F shall use the form for sub-Contract in M.G.L. c. 149, sec. 44F(4)(c). The Contractor shall not interpret paragraph 3 of the statutory form of Subcontract to require such sub-bidders to provide insurance with limits higher than the limits that are required by the Contract Documents, if the term “Contractor” refers to the sub-bidder and that the term “Contract Price” refers to the sub-bidder’s price stated in paragraph 1 of the statutory form of Subcontract.

22. Sales Tax Exemption and Other Taxes.

All building materials and supplies as well as the rental charges for construction vehicles, equipment and machinery rented exclusively for use on the Site, or while being used exclusively for the transportation of materials for the Work are entitled to an exemption from sales taxes under M.G.L. c. 64H, sec. 6(f). The Contractor shall take all action required to obtain the benefit of such sales tax exemption. The Contractor shall bear the cost of any sales taxes that the Contractor incurs in connection with the Work and the DCR shall not reimburse the Contractor for any such taxes. The exemption number assigned to the Contractor as an exempt purchaser shall be provided to the Contractor by the DCR upon the written request of the Contractor.

23. Final Cleaning.

At the completion of the Work, the Contractor shall remove all waste materials, rubbish, tools, equipment, machinery,

and surplus materials, and professionally clean all sight-exposed surfaces so that the Work is clean and ready for occupancy and/or use. After installation of DCR furniture, telephones, and equipment, the Contractor shall provide such additional cleaning as may be necessary to remove any soil resulting from installation of such furniture, telephones, and equipment. The costs of the required cleaning are included in the Contract price.

All permanent drainage structures such as catch basins, permanent detention or retention basins, drainage conveyances, piping, sumps, and particle separators will be cleaned of sediments and debris prior to acceptance of the Work. Any sediments or debris accumulated during construction shall be removed and disposed in accordance with local and state requirements.

24. Maintenance Data.
Subject to such additional requirements as may be provided in the Special Conditions or Specifications, the Contractor shall compile 3 complete and identical binders of operating and maintenance data for the entire Work. The Contractor shall submit record maintenance data to the DCR for approval and shall instruct and train the DCR's personnel in proper inspection and maintenance procedures.

25. Drainage Specifications.
Subject to such additional requirements as may be provided in the Special Conditions or Specifications, where construction involves replacement or construction of new storm water drainage systems including but not limited to catch basins, roof drains, recharge to groundwater systems and outfall structures, the Contractor shall provide drawings and electronic records in a form acceptable to the DCR that provides specifications and a site plan that identifies locations of the drainage system components and cleanout, if applicable.

26. Closeout Procedures.
The Contractor shall take all actions and submit all items required for Final Acceptance as specified in the Contract Documents.

27. Risk of Loss.
The Contractor shall bear all risk of loss to the Work during the term of the Contract except for any portion of the Work as to which the DCR has given final acceptance. Nothing herein shall limit the Contractor's responsibilities under Article IX or XV of these General Conditions of the Contract.

28. Photographs.
A. At the request of the DCR, the Contractor shall furnish the DCR suitable 4" X 6" color photographs and/or digital image files of the construction area, and any related work areas.
B. If the DCR requires the Contractor to provide photographs of the Work, the areas to be photographed and the locational reference point from which they are to be taken will be designated by the DCR, and shall be taken according to the following schedule:
a. Before construction operations have been started.
b. Each month during the performance of the Work.
c. After construction has been completed.
C. Each photograph shall have permanently written on its face a legible description or title indicating date, location, direction from which taken, project title and item of work photographed.
D. Upon completion of all work under this contract, the Contractor shall deliver all negatives, clearly identified, to the DCR. Photographs will be placed in acetate sleeves and bound in three booklet form.
E. The cost of furnishing photographs shall be included in the prices bid for the various items scheduled in the Proposal.

ARTICLE V: MATERIALS AND EQUIPMENT

1. **Materials Generally.**
A. Unless otherwise specifically provided in the Contract Documents, the Contractor shall provide and pay for materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work.
B. Materials and equipment to be installed as part of the Work (both or either of which are hereinafter referred to

as "materials") shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices. The Contractor shall inform himself/herself as to, and shall comply with, the provisions of M.G.L. c. 7, sec. 23A, as amended, and shall abide by the same and all applicable rules, regulations, and orders made thereunder in relation to the purchase of supplies and materials in the execution of the Work, including the provisions of M.G.L. c. 7, sec. 22, paragraph 17, which provides that there be *"a preference in the purchase of supplies and materials, other considerations being equal, in favor, first, of supplies and materials manufactured and sold within the Commonwealth, and, second, of supplies and materials manufactured and sold elsewhere within the United States."*

C. All materials furnished by the DCR to the Contractor for installation in the work will be delivered by freight train, truck, or other means of common carrier to the nearest convenient public railroad siding, freight station, trucking terminal or such other designated delivery point of which he will receive due notification. The Contractor, at his/her own expense, shall do all handling and conveying of such materials at and from the noted deliver site. He shall unload and remove them promptly from the cars, trucks, or terminals upon notification of their arrival and he shall be responsible for any demurrage, delay charges, damage done or loss of materials from the time of delivery to the final acceptance of the work. Materials previously delivered shall be turned over to the Contractor as soon as possible after the date ordered to begin work. He shall make a complete inventory with the Resident Engineer as to content and condition; thereafter he shall be responsible for the care, custody, and handling until the final acceptance of the work.

2. **Shop Drawings, Product Data, and Samples.**

A. The Contractor shall furnish to the Project Engineer all samples of the materials to be used in the execution of the Work as required by the Contract Documents. The Contractor shall furnish to the DCR in a timely manner all coordination Drawings, shop details, Shop Drawings, and setting diagrams which may be necessary for acquiring and installing materials. These shall be reviewed as required by the DCR. A minimum of six (6) copies shall be submitted for final approval, one of which shall be returned to the Contractor, one given to the Resident Engineer, and four maintained by the DCR. The inspection and approval by the DCR of Shop Drawings, etc. shall be general and shall in no way relieve the Contractor from responsibility for proper fitting, coordinating, construction, and construction sequencing. The Contractor shall furnish to the DCR such information and vouchers relative to the Work, the materials therefore, and the persons employed thereon, as the DCR shall from time-to-time request.

B. Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submission is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

C. The Contractor shall review, approve, and submit to the DCR, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the DCR or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents, or which do not comply with the Contract Documents may be returned without action. The Contractor's attention is directed to the provisions of Section 4 of this Article V and to the Specifications.

D. The Contractor shall prepare and keep current for the DCR's approval a schedule of submittals which is coordinated with the Progress Schedule and allows the DCR reasonable time to review submittals.

E. The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been approved by the DCR. Such Work shall be in accordance with Approved submittals.

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

G. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the DCR's approval of Shop Drawings, Product Data, Samples, or similar submittals unless the Contractor has specifically informed the DCR in writing of such deviation at the time of submittal and the DCR has given explicit written

approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the DCR's actions.

H. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the DCR on previous submittals.

I. Informational submittals upon which the DCR is not expected to take responsive action may be so identified in the Contract Documents.

J. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, such certification must be stamped by a registered Massachusetts professional in the discipline required. The DCR shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

K. Materials furnished or used or employed under the Contract must be equal in quality to the samples furnished and be satisfactory to the DCR.

3. **Tests.**

A. Any material to be used in the Work may be tested or inspected at any time, on or off Site, by or under direction of the DCR, and may be rejected if it fails to comply with specified tests. The Contractor shall test all materials unless specified otherwise in the Special Conditions or Specifications. The Contractor shall also pay for all testing of specified material unless specified otherwise in the Special Conditions or Specifications. If the Contractor requests permission to use a material that was not specified, then the Contractor in all cases shall pay for such testing. The cost of testing of materials that fail the testing criteria shall be borne by the Contractor

B. The Contractor shall notify the DCR of the proposed sources of materials in time to permit all required testing and inspection before the material is needed for incorporation into the Work. The Contractor shall have no claim arising from the Contractor's failure to designate the proposed source or to order the material in time for adequate testing and inspection. Necessary arrangements shall be made to permit the DCR to make factory, shop or other inspection of materials or equipment ordered for the Work in the process of manufacture or fabrication, as required by the Contract Documents. The DCR will not assume any obligation for the sampling and testing of materials other than on the Site, unless so required by the Specifications.

C. Where tests of materials will be made by the DCR or under its direction, the Contractor or his/her suppliers shall furnish such facilities as the DCR may require for collecting and forwarding samples and shall not make use of, nor incorporate into the Work, any material represented by the samples until the required tests have been made and the material accepted, unless otherwise directed. The Contractor in all cases shall furnish the required samples without charge. In the event of failure of materials to meet the Contract Documents, any retesting of new materials or of the same materials after reworking, shall be paid for by the Contractor.

D. The testing of the Work shall not relieve the Contractor of any of his/her obligations to fulfill the terms of the Contract as herein prescribed by the Contract Documents. Failure to reject any defective work or materials shall in no way prevent later rejection when such defect is discovered, notwithstanding that such defective work or materials had been previously overlooked or misjudged by the DCR and accepted or estimated for payment, nor shall such obligate the DCR to make final acceptance thereof. If sampling and testing reveal that the material is unsatisfactory, it will then be the responsibility of the Contractor to remove it from the Work, replace it, or blend it with such other material so that an acceptable material will be produced. The removal, replacement and blending of such material shall be done by the Contractor without additional compensation.

4. **"Or Equal" Submissions.**

A. Where products or materials are prescribed by manufacturer name, trade name, or catalog reference, the words "or Approved equal" shall be understood to follow. An item shall be considered equal to the item so named or described if in the opinion of the DCR (a) it is at least equal in quality, durability, appearance, strength, and design, (b) it performs at least equally the function imposed in the general design for the Work, and (c) it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the Specifications. Any structural or mechanical changes made necessary to accommodate products or materials substituted as an "or equal" shall be at the expense of the Contractor. If the cost of the material substituted as an "or equal" is less than the cost of the material specified, such savings in cost shall be credited to the DCR and deducted from the price. "Approved equal" shall mean an item with respect to which the DCR shall have issued a written statement to the Contractor to the effect that the item is, in the DCR's opinion, equal within the meaning of this paragraph to that prescribed in the Contract Documents.

B. The Contractor shall be responsible for providing the DCR with any information and test results that the DCR reasonably requires to determine whether a material is equal to a material named or described in the Contract Documents.

C. The Contractor shall make all requests for substitution of a material named or described in the Contract Documents in writing, and at least thirty (30) days prior to the date the materials will be used in the Work, or immediately upon becoming aware of the following exigencies: (1) the non-availability of the specified material, (2) delay of the delivery of the specified material that will preclude the completion of the Work or any part thereof within the time specified in the Contract or (3) unforeseen field conditions that necessitate the substitution of the specified material. In no event shall the Contractor maintain a claim for delays based upon the DCR's review of such substituted materials if the Contractor failed to submit a written request for such substitution in accordance with the provisions of this paragraph. A written request for a material substitution due to an exigency set forth above shall be accompanied with documentation of the exigency, including but not limited to, a photocopy of a letter from the supplier or manufacturer stating that he/she is unable to furnish the specified materials and the reasons that he/she is unable to furnish the materials, as required by the DCR. If the Contractor's proposed substitution due to an exigency is declined, the DCR shall, at its discretion, specify an “or equal” substitution.

D. The Contractor shall have the burden of proof with respect to any claimed increases in the Contract Price resulting from the improper rejection by the DCR of any material proposed by the Contractor as an equal. No increase in the Contract Price shall be permitted unless the Contractor submits documentary evidence sufficient to prove to the reasonable satisfaction of the DCR that the rejection increased the Contractor's costs over the costs provided for in the Bid pricing documents, net of all savings the Contractor obtained by substituting other “or equal” items. The Contractor shall submit copies of all pricing materials, calculations, plans, Specifications, Drawings, and other design documents that the DCR deems necessary or desirable to evidence such increased costs. In calculating the Contractor's increased costs, a deduction shall be made for all costs that the Contractor would have incurred making structural or mechanical changes to include within the Work the item later found to have been improperly rejected.

5. **Delivery and Storage of Materials; Inspection.**

A. Materials and equipment shall be progressively delivered to the Site so that there will be neither delay in the progress of the Work nor an undue accumulation of materials that are not to be used within a reasonable time, and stored so that their security, quality, and fitness of the materials for the Work is preserved.

B. Vehicle Weight Limits

1. The Contractor's attention is directed to Chapter 90, Section 19A of the General Laws as amended concerning the weight limits for construction type motor vehicles.
2. No materials supplied for the project shall be accepted in vehicles whose gross weight exceed the legal load limits as determined by the regulatory agencies of the Commonwealth and Federal Government
3. Weight slips that indicate the load exceeding the legal load limit will not be countersigned by the DCR.

C. If the Engineer so requests, the Contractor, at any time before final acceptance of the work, shall remove or uncover such portions of the finished work as may by directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed, will be at the Contractor's expense.

D. Necessary arrangements shall be made to permit the DCR to perform all required inspection and testing of materials or equipment ordered for the Work at the factory or shop during the process of manufacture or fabrication, or in storage on or off Site. The Contractor shall have no claims because of his/her failure to designate the proposed source of the material in time for adequate testing and inspection.

E. Materials stored off Site shall be insured and stored at the expense of the Contractor to guarantee the preservation of their security, quality, and fitness for the Work. Without derogating from the Contractor's responsibilities in the previous sentence, when necessary to avoid deterioration or damage, material (on or off Site) shall be placed on wooden platforms or other hard clean surfaces and not on the ground and shall be properly protected.

F. Expenses for inspection of material by DCR personnel including travel, quarters, and subsistence shall be borne by the Contractor requesting the inspection of material stored outside the Commonwealth of Massachusetts as part of the Contract Price. The policy of the DCR precludes the payment for material stored outside the boundaries of Massachusetts except in extremely limited circumstances with the express written consent of the DCR. If the Contractor requests an inspection of material stored outside the Commonwealth of Massachusetts, the DCR will initially pay for all expenses of inspecting the material incurred by DCR's personnel including travel, quarters, and subsistence. The DCR will then give Contractor an invoice for those costs and the Contractor shall submit a credit Change Order for those expenses.

G. Stored materials either at the Site or at some other location agreed upon in writing shall be so located as to facilitate prompt inspection and even though approved before storage, may again be inspected prior to their use in the Work.

H. Where no inspection of materials is arranged by the DCR and before such materials are incorporated into the work, the Contractor shall be required to submit to the DCR for approval, three copies of the Manufacturer's or Supplier's statement for each kind of material furnished, which shall contain the following information:

1. Work for which the material is consigned.
2. Name of the Contractor to which the material is supplied.
3. Description of material supplied.
4. Quantity of material supplied.
5. Means of identifying the consignment, such as label, marking, seal number, etc.
6. Date and method of shipment.
7. Statement to the effect that the material has been tested and found in conformance with the Contract Documents.
8. Results of all required tests, or in lieu of said results, the Manufacturer's, or Supplier's guarantee that he/she shall maintain said results, and make them available to the DCR for a period of not less than three years from the date of final acceptance of final payment by the Commonwealth.
9. Signature of a person duly authorized to bind the Manufacturer or Supplier.

I. All storage sites shall be restored to their original condition by the Contractor at the Contractor's expense. This shall not apply to the stripping and storing of topsoil, or to other materials salvaged from the work.

J. The Contractor shall take charge of and be liable for any loss of or injury to the materials for his/her use delivered to or in the vicinity of the place where the Work is being done, whether furnished by the DCR or otherwise. The Contractor shall notify the DCR as soon as any such materials are so delivered, allow them to be examined by the DCR, and furnish workers to assist therewith.

K. Private property shall not be used for storage purpose without the written permission of the property owner, and if requested by the DCR copies of such written permission shall be furnished by the Contractor.

6. **Defective, Damaged, or Deteriorated Materials and Rejection Thereof.**

The DCR may reject materials if the DCR reasonably determines that such materials do not conform to the Contract Documents in any manner, including but not limited to materials that have become damaged or deteriorated from improper storage whether such materials have previously been accepted. The Contractor at its own expense shall remove rejected materials from the Work. No rejected material, the defects of which have been subsequently corrected, shall be used except with the written permission of the DCR. Should the Contractor fail to remove rejected material within a reasonable time, the DCR may, in addition to any other available remedies, remove and/or replace the rejected material, and deduct the cost of such removal and/or replacement from any moneys due or to become due the Contractor. No extra time shall be allowed for completion of Work by reason of such rejection. The inspection of the Work shall not relieve the Contractor of any of its obligations herein prescribed, and any defective Work shall be corrected. Work not conforming to the Contract Documents may be rejected notwithstanding that such Work and materials have been previously overlooked or misjudged by the DCR and accepted for payment. If the Work or any part thereof shall be found defective at any time before Final Acceptance of the whole Work, the Contractor shall forthwith make good such defect in a manner satisfactory to the DCR. Nothing in the Contract shall be construed as vesting in the Contractor any property rights in the materials used after they have been attached or affixed to the Work or the Site; but all such materials shall upon being so attached or affixed become a property of the DCR.

7. **Measurement**

A. The method of measurement for materials necessary for the proper execution of the Work is set forth at the end of each Section of these Specifications. The computations to be used in determination of quantities of material furnished and of work performed under the Contract shall be selected by the DCR.

B. For the estimating of quantities in which the computations or areas by analytic and geometric methods would be comparatively laborious, it is stipulated and agreed that the planimeter shall be considered an instrument of precision adapted to the measurement of such area.

C. To aid the Resident Engineer in determining the quantities and weights of cement and other materials to be paid for, the Contractor shall, whenever so required, give him access to the proper invoices, bills of lading, etc., and shall provide scales and assistance for weighing, or assistance for measuring, any of the materials.

D. All measurements shall be confirmed by the DCR as they are made to determine the quantities of the various items of work performed. All measurements shall be made according to the United States Standard Units of Measurement.

E. Unless otherwise specified, longitudinal measurements for area computations will be made horizontally. Unless otherwise specified transverse measures for area computations will be the dimensions shown on the Drawings or in writing by the DCR.

F. All items which are measured by the linear foot, including, but not limited to pipe, culverts, guardrail, curbing, will be measured parallel to the base or foundation upon which such structures are placed, unless otherwise shown on the Drawings.

G. In computing volumes of excavation, the average end area method, or other methods acceptable to the DCR will be used.

H. A sworn weigher shall weigh all materials required to be weighed. The weighing of such materials may be witnessed by the DCR.

I. If materials are shipped by rail or trucks, the car weights or quarry weights may be accepted. Weight slips shall be provided for each shipment of material weighed. Each weight slip shall be signed by the sworn weigher, and countersigned, on delivery, by the DCR. Material listed on weight slips that are not countersigned by the DCR shall not be included for payment under the Contract.

J. When requested by the Contractor and approved by the DCR in writing, material specified to be measured in weight may be weighed and converted to volume measurement for payment purposes.

ARTICLE VI: PROSECUTION AND PROGRESS

1. Beginning, Progress Schedule, and Completion of Work.

A. The Contract time shall commence the work upon the date specified in the Notice to Proceed. The Contractor shall begin Work at the Site within ten (10) days of said date unless otherwise ordered in writing by the DCR.

B. Within seven (7) days after the issuance of the Notice to Proceed, Saturdays, Sundays and legal holidays excluded, the Contractor shall submit to the DCR a progress schedule for the term of the Contract as required by the Contract Documents, showing in detail his/her proposed progress for the construction of the various parts of the Work and the proposed times for receiving required materials. Upon approval by the DCR, said schedule shall constitute the Progress Schedule. The Contractor shall at the end of each month, or more often if required, furnish to the DCR a schedule meeting the requirements of the Specifications showing the actual progress of the parts of the Work in comparison with the Progress Schedule.

C. Time is of the essence of this Contract. The Work shall be completed within the time specified in Article 2 of the Department of Conservation and Recreation - Contractor Agreement. Should the Contractor require additional time to complete the Work, the Contractor shall document the reasons therefor and submit a written request for an extension of time within 20 days of the occurrence of the event alleged to be the cause of the delay, as provided in this Article and in Article VII of these General Conditions of the Contract. Failure to submit said written request within the time required by the preceding sentence shall preclude the Contractor from subsequently claiming any time extension due to said delay.

D. If, in the opinion of the DCR, the Contractor fails to comply with the construction schedule as set forth in the Contractor's bid or the Project specifications, the DCR may give the Contractor a notice specifying the time limits and performance standards that the Contractor is failing to meet whereupon (1) the Contractor shall, if the notice requires, discontinue all or any portion of the Work (which discontinuance shall neither terminate the Contract nor give the Contractor any claim for an increase in the Contract Price, damages, or an extension of any completion deadlines); or (2) at Contractor's sole cost increase the work force, equipment and plant, or any of them, employed on the whole or any part of the Work, to the extent required by such notice, and employ the same from day to day until the completion of the Work or such part thereof, or until the failure regarding the rate of progress, in the opinion of the DCR, shall have been sufficiently corrected.

E. If, in the opinion of the DCR, the Contractor fails to comply with the construction schedule, and whether the DCR shall have given the Contractor a notice described in D above, the DCR may (but shall not be required to) give the Contractor notice of such failure and five (5) days to cure the same. Unless the Contractor shall within that five days take all necessary steps to do so (including, if the DCR requires, increasing its forces, equipment and plant) and continue to do so until in the opinion of the DCR the failure is corrected, the DCR may at the Contractor's expense and without terminating this Contract take exclusive or joint possession of all or a portion of the Site and employ and direct the labors of existing or such additional forces, equipment and plant as may in the DCR's opinion be necessary to insure the completion of the Work or such part thereof within the time specified in the Contract Documents or at the earliest possible date thereafter. The DCR may exercise its rights under this Article at any time and from time to time without waiving any of its rights under this Contract, at law or in equity, including, without limitation, the right to deem this Contract terminated or to order the Contractor to discontinue the Work at any time thereafter. The Contractor shall continue to perform the remaining Work under this Contract even if the DCR elects to have another contractor perform a portion of the Work under this Article.

F. The DCR shall deduct the cost of any actions the DCR takes under this Article from any amount then due or which might have become due to the Contractor under this Contract had the Contractor performed as required. On demand, the Contractor shall pay the DCR any amount by which the cost of completing all or any portion of the Work exceeds the amount attributable to that Work under the Contract Documents. The DCR's sole goal will be to complete the Work that it elects to complete within the time limits stated in the Contract or soon thereafter. Consequently, the DCR shall have no obligation to obtain competitive bids or the lowest cost for completing the Work or any part thereof, except when it is required by law. The DCR's election to complete all or part of the Work shall not release the Contractor from any liability for failure to complete the Work as the Contract Documents require and shall not entitle the Contractor to a claim for an increase in the Contract Price or an extension of the time for completing the Work. If the cost that the DCR incurs in completing all or any portion of the Work is less than the amount that the Contract Documents attribute to that Work, the DCR will pay or credit the difference to the Contractor, less any other costs and expenses that the DCR incurs, including the cost of supervision, and attorneys' fees and costs.

2. <u>Failure to Complete Work on Time - Liquidated Damages.</u>

A. If liquidated damages are specified in the Department of Conservation and Recreation - Contractor Agreement, the DCR has determined that its damages because of Contractor's failure to complete the Work fully within the time specified will be difficult or impracticable to ascertain. Accordingly, if the Work is not completed to such point by the date specified in this Contract, the Contractor shall pay to the DCR the sum designated as liquidated damages in the Contract for each calendar day that the Contractor is in default in completing the Work to such point. Such moneys shall be paid as liquidated damages, not as a penalty, to cover losses and expenses to the DCR resulting solely from the fact that the Work is not completed on time.

B. Similarly, if the Contract states that by a specified date a designated portion of the Work shall be fully completed, and if such portion has not been prosecuted to such point by said date, the Contractor shall pay to the DCR the sum designated in the Contract for each calendar day that the Contractor is in default in completing such portion of the Work to such point. Such moneys shall also be paid as liquidated damages, not as a penalty, to cover losses and expenses to the Department of Conservation and Recreation resulting solely from the fact that the Work is not completed on time.

C. The DCR may recover such liquidated damages by deducting the amount thereof from any moneys due or that might become due the Contractor, and if such moneys shall be insufficient to cover the liquidated damages, then the Contractor or the Surety shall pay to the DCR the amount due.

D. Permitting the Contractor to continue and finish the Work or any portion of it after the time fixed in the Contract for its completion shall not be deemed as a waiver of any of the DCR's rights hereunder, at law or in

equity.

E. Liquidated damages or a portion thereof may be waived by the DCR if the Contractor submits evidence satisfactory to the DCR that the delay was caused solely by conditions beyond the control of the Contractor and that the DCR has not suffered any damages because of said delay.

F. Failure by the DCR to specify a sum as liquidated damages in the Department of Conservation and Recreation - Contractor Agreement, or the insertion of "N/A" or "none" in the space provided therein for liquidated damages, shall not be deemed a waiver of the DCR's right to recover actual damages arising from the Contractor's failure to complete the Work on time.

3. Delays; Statutory Provisions (M.G.L. c. 30, sec. 39O).

A. Notwithstanding any provision of this Contract to the contrary, except as otherwise provided by law as set forth in paragraph B below, the Contractor shall not be entitled to increase the Contract Price or to receive damages on account of any hindrances or delays, avoidable or unavoidable; but if any delay is caused in the opinion of the DCR, the Contractor shall be entitled to an extension of time. The length of the extension shall be sufficient in the opinion of the DCR for the Contractor to complete the Work. Although no delay shall increase the Contract Price, the DCR may require that any change in the date by which the Contractor must complete all or any part of the Work be processed on a Change Order form.

B. If a suspension, delay, interruption or failure to act of the DCR increases the cost of performance to any Subcontractor, that Subcontractor shall have the same rights against the Contractor with respect to such increase as the Contractor shall have against the DCR by virtue of (a) and (b) of M.G.L. c. 30, s. 39O set forth below, but nothing in provisions (a) and (b) shall alter any other rights which the Contractor or the subcontractor may have against each other. As used in the statutory language of (a) and (b) below, "contract" means this Contract, "general contractor" means the Contractor and "awarding authority" means the DCR:

"*(a) The awarding authority may order the general contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as it may determine to be appropriate for the convenience of the awarding authority; provided, however, that if there is a suspension, delay or interruption for fifteen days or more or due to a failure of the awarding authority to act within the time specified in this contract, the awarding authority shall make an adjustment in the contract price for any increase in the cost of performance of this contract but shall not include any profit to the general contractor on such increase; and provided further, that the awarding authority shall not make any adjustment in the contract price under this provision for any suspension, delay, interruption or failure to act to the extent that such is due to any cause for which this contract provides for an equitable adjustment of the contract price under any other contract provisions.*

(b) The general contractor must submit the amount of a claim under provision (a) to the awarding authority in writing as soon as practicable after the end of the suspension, delay, interruption or failure to act and, in any event, not later than the date of final payment under this contract and except for costs due to a suspension order, the awarding authority shall not approve any costs in the claim incurred more than twenty days before the general contractor notified the awarding authority in writing of the act or failure to act involved in the claim."

4. Occupancy and/or Use of Project Prior to Final Acceptance.

A. The Contractor agrees to the occupancy and/or use of the Project or any portion thereof before Final Acceptance of the Work by the DCR.

B. The DCR will cooperate with the Contractor with respect to the completion of the Work by taking such reasonable steps as may be possible to avoid interference with the Contractor's Work if they do not interfere with the proper functioning of the facility.

C. The Contractor shall not be responsible for wear and tear or damage resulting solely from temporary occupancy.

D. Occupancy and/or use of any part of the Work prior to Final Acceptance by the DCR shall not relieve the Contractor from maintaining the required payment and performance bonds and insurance (to the extent that insurance is required to be maintained after Substantial Completion) required by this Contract.

5. Substantial Completion – Punch List.

A. When the Work, or portion thereof which the DCR agrees to accept separately has reached the state of Substantial Completion as shown on an Approved payment request, the Contractor shall develop, with the participation of the DCR, the Punch List identifying those items of unfinished or unacceptable Work that remain to be performed or corrected under the Contract.

B. Before the Work shall be deemed completed to the point where it is ready for the issuance of Final Acceptance, the Contractor shall:

(1) Provide Contractor's proposed Punch List containing a statement of the reason for each item listed thereon.
(2) Advise the DCR of proposed changes in insurance in accordance with the provisions of this Contract, and provide to the DCR evidence of the Contractor's Completed Operations insurance coverage to the extent required by the Contract Documents.
(3) Execute and submit a notarized warranty on a form provided by the DCR meeting the requirements of Article IX of these General Conditions of the Contract, to commence upon the date of the Certificate of Final Acceptance, unless otherwise provided in the Certificate of Final Acceptance.
(4) Submit signed special warranties and warranties of longer than one year as required by the Contract Documents.
(5) Submit signed maintenance agreements for all portions of the Work specified to receive maintenance after the issuance of the Certificate of Final Acceptance.
(6) Submit all preliminary record Drawings to the DCR and documents and framed data in the forms required by the Contract Documents.
(7) Complete all items required to be completed by the Department of Public Safety and obtain a Certificate of Occupancy from the Department of Public Safety and similar releases which permit the full and unrestricted use of the areas claimed to be ready for occupancy.
(8) Deliver specified maintenance stocks of materials, required spare parts, and all special tools furnished by manufacturers to persons designated by the DCR and obtain written receipts for same.
(9) Make final changes of lock cylinders or cores and advise the DCR of the change of project security responsibility.
(10) Complete start-up of systems, and instruct DCR personnel on proper operation and routine maintenance of all systems and equipment.
(11) Remove all remaining temporary facilities that are no longer needed, surplus materials, and debris; (the Contractor shall not remove construction offices and trailers without the prior Approval of the DCR).
(12) Submit final utility meter readings and similar information and advise the DCR of the change of responsibility for utility charges and payments upon occupancy and/or use,
(13) Complete final clean-up of all Work, restoration of damaged land and property, including finishes, and replacement of all damaged and broken glass not listed on the Contractor's Punch List.
(14) Complete such other items as may be called for in the Special Conditions, if any, or Specifications.

C. After completing the items specified in subsection A above, the Contractor shall make a written request for the DCR's inspection for a Certificate of Final Acceptance in accordance with the Contract Documents. The DCR shall review the submittals and the Work and shall either 1) sign a Certificate of Final Acceptance or 2) notify the Contractor of incomplete and/or incorrect Work that must be completed and corrected prior to the issuance of the Certificate of Final Acceptance. The DCR shall notify the Contractor of any additions to the Punch List. In connection with the execution of the Certificate of Final Acceptance, the DCR shall assign dollar values to each item on the Punch List. Failure to include any incomplete or defective item on the Punch List shall not relieve the Contractor of the obligation to complete all Work in accordance with the Contract Documents.

6. <u>Final Acceptance of the Work.</u>

A. Prerequisites for Final Acceptance. After the Contractor has completed all the Work required by this Contract, including Change Orders and Punch List Items, the Contractor shall submit the following completed items to the DCR together with such additional items as may be specified in the Contract Documents:

(1) A final request for payment showing a final accounting of all changes in the Work.
(2) Certification and satisfactory evidence that all taxes, fees, and similar obligations have been paid.
(3) Consent of the Surety to Final Payment executed by applicable bonding companies.
(4) Certified copy of the Punch List stating that the Contractor has completed or corrected every item listed.
(5) Evidence of the Contractor's continuing Completed Operations Insurance coverage to the extent required by the Contract Documents.
(6) All final record Drawings and documents in the forms specified by the Contract Documents.
(7) A notarized certification that all purchases made under the tax exemption certificate were legitimate and entitled to exemption.

(8) Written certifications from the Department of Public Safety and/or the DCR, where required, to the effect that: a) the Work has been inspected for compliance with the Contract Documents and has satisfied the Department of Public Safety; b) all equipment and systems included in the Work have been tested in the presence of the DCR and are operational and satisfactory; c) the Work is completed and ready for final inspection.
(9) Such other items as may be required by the Contract Documents.

B. Reinspection; Final Acceptance. After notification from the Contractor that all remaining contract exceptions, omissions, and incompletions have been completed (except for the Contractor's continuing warranty, insurance, indemnification, and such other obligations as are intended by the terms of the Contract Documents to extend beyond the date of Final Acceptance), the DCR shall inspect the Work to verify the completion of the same. If the Work is satisfactory, the DCR shall prepare a Certificate of Final Acceptance or shall notify Contractor of items which remain to be completed prior to Final Acceptance.

7. <u>One-Year Warranty Repair List and Inspection.</u>
Approximately 30 days prior to the expiration of the comprehensive one-year warranty period, the Contractor shall schedule an appointment with the DCR for a re-inspection of the Work with the DCR and shall thereafter inspect the Work at the time scheduled. Based on this inspection and on prior inspections, the DCR shall issue a "Warranty Repair List" of items to be corrected by the Contractor. The Contractor shall make the repairs and/or replacements listed within 30 days of the issuance of the Warranty Repair List unless otherwise agreed by the DCR in writing.

ARTICLE VII: CHANGES IN THE WORK

1. <u>Change Orders Generally.</u>
A. The DCR may, pursuant to the provisions of M.G.L. c. 30, sec. 39K, authorize in writing, alterations in the line, grade, plans, form, dimensions or materials of the work, or any part thereof, either before, or after the commencement of construction. If such alterations diminish or increase the quantity included to be done and paid for at a unit price, or work substituted for the work specified is of a different cost and quality, the parties shall be governed by the aforesaid provisions of Law. No changes in the Work shall be made in absence of a Change Order defined in Article I of these General Conditions of the Contract, directing the Contractor to perform such changes. A request for a change in the provisions of this Contract may be submitted to the DCR by the Contractor, Project Engineer or Resident Engineer. The request must be made in writing and in accordance with the provisions of this Contract, Laws, and the procedures of the DCR. The DCR reserves the right to increase or decrease quantities, to eliminate portions of the work or add work of similar nature, and to direct the commencement and order of prosecution of various portions of the work.
B. A Change Order may be issued by the DCR for changes in the Work within the scope of the Contract, including but not limited to, changes in: (1) the Plans and Specifications; (2) the method or manner of performance of the Work; (3) the DCR-furnished facilities, equipment, materials, services, or Site; (4) the schedule for performance of the Work.
C. The Contractor shall immediately perform any Change Order work that is ordered by the DCR.

D. Whenever a Change Order is issued and said Change Order will cause a change in the Contractor's cost, the Contractor or the DCR may request an equitable adjustment in the Contract Price. A request for such an adjustment shall be in writing and shall be submitted by the party making such claim to the other party before commencement of the pertinent work or as soon thereafter as possible.
E. The DCR and the Contractor shall negotiate in good faith an agreement on an equitable adjustment in the Contract Price, and/or time if appropriate, before commencement of the pertinent work or as soon thereafter as is possible. In the absence of an agreement for an equitable adjustment, the DCR shall unilaterally determine the costs attributable to the change and provide the Contractor with a written notice to that effect. The determination of the DCR shall be final as to all questions of the amount and value of extra work, where the Contractor does not appeal said decision pursuant to the process set forth in this paragraph. The Contractor may appeal the decision of the DCR within thirty days of receipt of said notice, to the Commissioner of the DCR or his designee. The Contractor shall have the right to such further appeal as is provided in M.G.L. c. 30, sec. 39Q set forth in Section 4.D of this Article VII. However, if the Contractor shall exercise its rights to appeal the decision of the DCR as

aforesaid, the Contractor shall be required to engage in the mediation procedures set forth in Section 5 of this Article VII, should the DCR require such mediation.

F. During the negotiation of an equitable adjustment in the Contract Price, the Contractor shall, if requested, provide the DCR with all cost and pricing data used by him in computing the amount of the equitable adjustment, and the Contractor shall certify that the pricing data used was accurate, complete, and current. If the DCR subsequently determines that the data submitted by the Contractor was incomplete, incorrect, or not current, the DCR may exclude such data from consideration under the equitable adjustment request.

2. Methods of Computing Equitable Adjustments.

A. Equitable adjustments in the Contract Price shall be determined according to one of the following methods, or a combination thereof, as determined by the DCR: (1) fixed price basis, provided that the fixed price shall be inclusive of items (a) through (e) below and shall be computed in accordance with those provisions; (2) estimated lump sum basis to be adjusted in accordance with Contract unit prices or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment; (3) time and materials basis to be subsequently adjusted on the basis of actual costs (but subject to a predetermined "not to exceed limit") calculated as follows:

(a) the direct cost (or credit) for labor at the minimum wage rates established for this Contract pursuant to M.G.L. c. 149, sections 26-27H, and the direct cost for material and use of equipment.

(b) plus (or minus) the cost of Workmen's Compensation Insurance, Liability Insurance, Federal Social Security and Massachusetts Unemployment Compensation, or as an alternative the Contractor may elect to use a flat 30% of the total labor rate computed in accordance with subparagraph (a) above.

(c) plus, an allowance equal to 20% of the amount of (a) above for overhead, superintendence, and profit; (In the case of Item 1 work, which is the work of the Contractor and all his non-filed Subcontractors, said 20% allowance shall be paid to the Contractor and the Contractor and said non-filed Subcontractors shall agree upon the distribution of this amount as a matter of contract between them. In the case of Item 2 work, which is work performed by a Subcontractor filed pursuant to M.G.L. c. 149, sec. 44F, said 20% allowance shall be paid to the filed Subcontractor, it being understood that this provision does not apply to other Subcontractors including sub-Subcontractors listed under paragraph E of the form for sub-Bid).

(d) plus, for work performed by a Subcontractor filed pursuant to M.G.L. c. 149, sec. 44F, an additional allowance equal to 7% of the sum of (a) through (c) above as full compensation to the Contractor for processing forms and assuming full responsibility for the faithful performance of such work by said filed Subcontractor(s).

(e) plus (or minus) the actual direct additional premium costs and expenses incurred because of collective bargaining agreements or other agreements between organized labor and employers, and plus (or minus) the actual direct premium cost of payment and performance bonds required of the Contractor and filed Subcontractors for this Contract.

B. If the net change is an addition to the Contract Price, it shall include the Contractor's overhead, superintendence, and profit. On any change that involves a net credit, no allowance for overhead, superintendence and profits shall be included. For any change that does not include labor performed or materials installed in the Project, there will be no markup for the Contractor's overhead, superintendence, and profit, even though there may be a net increase in the Contract Price. Charges for small tools known as "tools of the trade" are not to be computed in the amount of any change in the Contract Price.

C. Statutory Contract adjustments made under the provisions of M.G.L. c. 149, sec. 44F shall not be considered Change Orders and shall not entitle the Contractor to any adjustments for overhead, profit, and superintendence, although the DCR may require that such Contract adjustments be processed on standard Change Order and equitable adjustment forms.

3. Work Performed Under Protest.

The Contractor agrees to perform all Work as directed by the DCR, and if the Project Engineer determines that certain Work that the Contractor believes to be or to warrant a Change Order under this Article does not represent a change in the Work, the Contractor shall perform said Work. The Contractor shall be deemed to have concurred with the Project Engineer's determination as aforesaid unless the Contractor shall perform Work under protest in compliance with the following sub-paragraphs (1) and (2) below:

(1) If the Contractor claims compensation for a change in the Work that is not deemed by the Project Engineer to be a change or to warrant additional compensation as claimed by the Contractor, the Contractor shall within one week after the commencement of any such work or the sustaining of any such damage submit to the Resident Engineer a written statement of the nature of such work or claim. The Contractor shall not be entitled to additional compensation for any work performed or damage sustained for which written notice is not given within the time limit specified in the preceding sentence, even though similar in character to work or damage with respect to which notice is timely given.

(2) On or before the fifteenth day of the month succeeding that in which any such extra work shall have been done or any such damage shall have been sustained, the Contractor shall file to the extent possible with the Resident Engineer, itemized statements of the details and costs of such work performed, or damage sustained. If the Contractor shall fail to make such statement to the extent possible, then the Contractor shall not be entitled to additional compensation for any such work or damages.

4. <u>False Claims. Statutory Provisions Regarding Changes.</u>

A. Criminal Penalties: The Contractor's attention is directed to M.G.L. c. 30, sec. 39I which provides criminal penalties for unauthorized deviations from the Plans and Specifications, and to M.G.L. c. 30, sec. 39J, and if performing work on a capital facility project, M.G.L. c. 7, sec. 42E-42I. The Contractor's attention is also directed to M.G.L. c. 266, sec. 67B which provides criminal penalties for false claims by Contractor under this Contract: *"Whoever makes or presents to any employee, department, agency or public instrumentality of the commonwealth, or of any political subdivision thereof, any claim upon or against any department, agency, or public instrumentality of the commonwealth, or any political subdivision thereof, knowing such claim to be false, fictitious, or fraudulent, shall be punished by a fine of not more than ten thousand dollars or by imprisonment in the state prison for not more than five years, or in the house of correction for not more than two and one-half years, or both."*

B. Differing Site Conditions (M.G.L. c. 30, sec. 39N): "*If, during the progress of the work, the contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the Site differ substantially or materially from those shown on the plans or indicated in the contract documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing Site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly.*"

C. Timely Decision by Awarding Authority. (M.G.L. c. 30, sec. 39P): *"Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made."*

D. Change Order / Contract Interpretation Appeal Procedure (M.G.L. c. 30, sec. 39Q): The following provisions apply to every contract awarded by any state agency as defined by M.G.L. c. 7, sec. 39A for the construction, reconstruction, alteration, remodeling, repair, or demolition of any capital facility as defined by the aforesaid section 39A:

"*(a) Disputes regarding changes in and interpretations of the terms or scope of the contract and denials of or failures to act upon claims for payment for extra work or materials shall be resolved according to the following procedures, which shall constitute the exclusive method for resolving such disputes. Written notice of the matter in dispute shall be submitted promptly by the claimant to the chief executive official of the state agency which awarded the contract or his designee. No person or business entity having a contract with a state agency shall delay, suspend, or curtail performance under that contract because of any dispute subject to this section. Any*

disputed order, decision or action by the agency or its authorized representative shall be fully performed or complied with pending resolution of the dispute.

"(b) Within thirty days of submission of the dispute to the chief executive official of the state agency or his designee, he shall issue a written decision stating the reasons therefore and shall notify the parties of their right of appeal under this section. If the official or his designee is unable to issue a decision within thirty days, he shall notify the parties to the dispute in writing of the reasons why a decision cannot be issued within thirty days and of the date by which the decision shall issue. Failure to issue a decision within the thirty-day period or within the additional time specified in such written notice shall be deemed to constitute a denial of the claim and shall authorize resort to the appeal procedure described below. The decision of the chief executive official or his/her designee shall be final and conclusive unless an appeal is taken as provided below.

"(c) Within twenty-one calendar days of the receipt of a written decision or of the failure to issue a decision as stated in the preceding subparagraph, any aggrieved party may file a notice of claim for an adjudicatory hearing with the division of hearing officers or the aggrieved party may file an action directly in a court of competent jurisdiction and shall serve copies thereof upon all other parties in the form and manner prescribed by the rules governing the conduct of adjudicatory proceedings of the division of hearing officers. In the event an aggrieved party exercises his option to file an action directly in court as provided in the previous sentence, the twenty-one-day period shall not apply to such filing and the period of filing such action shall be the same period otherwise applicable for filing a civil action in superior court. The appeal shall be referred to a hearing officer experienced in construction law and shall be prosecuted in accordance with the formal rules of procedure for the conduct of adjudicatory hearings of the division of hearing officers, except as provided below. The hearing officer shall issue a final decision as expeditiously as possible, but in no event more than one hundred and twenty calendar days after conclusion of the adjudicatory hearing, unless the decision is delayed by a request for extension of time for filing post-hearing briefs or other submissions assented to by all parties. Whenever, because an extension of time has been granted, the hearing officer is unable to issue a decision within one hundred and twenty days, he shall notify all parties of the reasons for the delay and the date when the decision will issue. Failure to issue a decision within the one-hundred-and-twenty-day period or within the additional period specified in such written notice shall give the petitioner the right to pursue any legal remedies available to him without further delay.

"(d) When the amount in dispute is less than ten thousand dollars, a contractor who is party to the dispute may elect to submit the appeal to a hearing officer experienced in construction law for expedited hearing in accordance with the informal rules of practice and procedure of the division of hearing officers. An expedited hearing under this subparagraph shall be available at the sole option of the contractor. The hearing officer shall issue a decision no later than sixty days following the conclusion of any hearing conducted pursuant to this subparagraph. The hearing officer's decision shall be final and conclusive and shall not be set aside except in cases of fraud."

5. <u>Mediation.</u>

In the case of every dispute where the dollar amount in dispute (or the estimated dollar value of the extension of time in dispute) is $50,000 or more and the Contractor appeals the decision of the DCR or his designee described in Section 4.B above, the DCR shall retain the option at its sole discretion of initiating a process whereby the DCR and the Contractor shall engage in good faith in a non-binding mediation process, which process shall be concluded within sixty days from the date that the Contractor files an appeal from said decision as provided in Section 4.B above.

ARTICLE VIII: PAYMENT PROVISIONS

1. <u>Schedule of Values.</u>

Before the first application for payment the Contractor shall submit to the DCR a schedule of values allocated to various portions of the Work in sufficient detail to reflect the various major components of each trade (with filed Subcontractors as well as MBE/WBE noted), including quantities when requested, aggregating the total Contract Price, and divided so as to facilitate payments for work under each section of the Specifications. The schedule shall be prepared in such form and supported by such data to substantiate its accuracy as the DCR may require. Each item in the schedule shall include its proper share of overhead and profit. When approved by the DCR, it shall constitute the Schedule of Values and shall be used only as a basis for the Contractor's requests for payments.

2. Payment Liabilities of Contractor.

A. The Contractor shall pay to the DCR all expenses, losses, and damages, as determined by the DCR, incurred in consequence of any default, defect, omission or mistake of the Contractor or his/her employees or Subcontractors or the making good thereof.

B. If the Work (or a portion thereof) is not completed to Substantial Completion and the Contractor has not fully completed the Work by the date specified in Article 2 of the Department of Conservation and Recreation - Contractor Agreement, the Contractor shall pay to the DCR liquidated damages as provided in Article VI, Section 2 of these General Conditions of the Contract.

3. Retention of Moneys by the DCR.

A. The DCR may keep any moneys which would otherwise be payable at any time hereunder, and apply the same, or so much as may be necessary therefor, to (1) the DCR's expenditures for the Contractor's account, (2) to secure the DCR's remedies against the Contractor for the Contractor's breach of its obligations under this Contract or the breach of any person performing any part of the Work and (3) the payment of any expenses, losses or damages incurred by the DCR as a result of the failure of the Contractor to perform its obligations hereunder. The DCR may retain, until all claims are settled, such moneys as the DCR estimates to be the fair value of the DCR's claims against the Contractor, and of all claims for labor performed or furnished and for materials used or employed in or in connection with the Work and for the rental of vehicles, appliances and equipment employed and for the employment of substitute contractors and labor in connection with the Work, in accordance with M.G.L. c. 30, sections 39A and 39F. The DCR may make such settlements and apply thereto any moneys retained under this Contract.

B. The Contractor shall each week examine all claims so filed, and if the same are in any respect incorrect or do not correctly show the amount due from the Contractor to the claimant for such labor and materials, the Contractor shall forthwith file with the DCR a separate written statement of all inaccuracies in each claim and of the correct amount due from the Contractor to each claimant therefor, and shall immediately file a statement of all payments thereafter made to such claimants. Each such statement shall be sworn to and contain a detailed breakdown as required by M.G.L. c. 30 s. 39F(d). Unless such statements are so filed by the Contractor the amount shown by the claims filed shall at the option of the DCR be conclusively deemed to be the accurate amount due from the Contractor therefor in all accounting with the DCR. If the moneys retained under this Contract are insufficient to pay the sums found by the DCR to be due under the claims for labor and materials filed as aforesaid, the DCR may, at its discretion, pay the same, and the Contractor shall repay to the DCR all sums paid out. The DCR may also at its discretion use any moneys retained, due or to become due under this Contract, for the purpose of paying for both labor and materials used or employed in the Work for which claims have not been filed with the DCR.

C. No moneys retained under the provisions of this Article shall be held to be statutory security for the payment of claims filed in accordance with the provisions of M.G.L. c. 149, sec. 29, as amended, for which security is provided by bond.

4. Applications for Payment.

A. The Contractor shall, once in each month on the day of the month corresponding to the day of the month specified in the Notice to Proceed referenced in Article 2 of the Department of Conservation and Recreation - Contractor Agreement, in writing and in the manner prescribed by the DCR, submit to the Resident Engineer a statement showing the total amount of Work done to the time of such estimate and the value thereof as approved by the Resident Engineer and the Project Engineer. It shall be the sole responsibility of the Contractor to deliver or cause to be delivered to the Resident Engineer said periodic estimate in proper form, approved as provided above and arithmetically correct. All periodic estimates shall contain such certifications and other evidence supporting the Contractor's right to payment as the DCR may require, including without limitation, lien waivers and other evidence, on such forms as the DCR may require, establishing that title to the equipment or materials is unencumbered and has been transferred to the Department of Conservation and Recreation. If there is no Resident Engineer assigned to the Contract, the DCR shall designate a person at the project field office or alternatively the home office of the DCR. The Contractor shall include in such periodic estimate only such materials as are incorporated in the Work, except as provided in paragraph C below. The DCR shall retain no more than five percent of such estimated value as part security for the completion of the Work and shall pay to the Contractor while carrying on the Work the balance not retained as aforesaid, subject to the approval of the DCR after deducting therefrom all previous payments and all sums to be kept under the provisions of this Contract.

B. Each periodic estimate shall constitute the Contractor's representation that (1) the payment then requested to be disbursed has been incurred by the Contractor on account of the Work and is justly due to Subcontractors or, to the Contractor in the case of other Work performed by the Contractor on account thereof, (2) the materials, supplies and equipment for which Application for Payment is being submitted have been installed or incorporated into the Work or have been stored at the Site or at such off Site storage locations as the DCR shall have Approved, (3) the materials, supplies and equipment are insured in accordance with the provisions of this Contract, (4) the materials, supplies and equipment are owned by the Department of Conservation and Recreation and are not subject to any liens or encumbrances, (5) the Work which is the subject of such periodic estimate has been performed in accordance with the Contract Documents and (6) that all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of such periodic estimate. The Contractor's attention is directed to the criminal penalties for false claims referenced in paragraph A above.

C. The Contractor may include in a periodic estimate the value of materials or equipment delivered at the Site (or at some location agreed to in writing) only upon delivery to the DCR of: (1) an acceptable transfer of title on the form provided by the DCR; (2) written certification by the Contractor (or applicable subcontractor) on the form provided by the DCR that the Contractor (or the Subcontractor which executed the transfer of title) is the lawful owner and that the materials or equipment are free from all encumbrances, accompanied by receipted invoices or other acceptable proof of encumbrance-free ownership if such proof is deemed necessary by the DCR; (3) a stored materials insurance binder that covers the materials for which payment is requested, that names the Department of Conservation and Recreation as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work. The material(s) or equipment must, in the judgment of the DCR (1) meet the requirements of the Contract, including prior drawing, product data, and sample approval, (2) be ready for use, and (3) be properly stored by the Contractor and be adequately protected until incorporated into the Work. See also Article V.5.C of these General Conditions of the Contract concerning the cost of inspections.

D. The DCR may make changes in any periodic estimate submitted by the Contractor in accordance with M.G.L. c. 30, sec. 39K for building projects (see below), and in accordance with M.G.L. c. 30, sec. 39G for public works projects (see below), and the payment due shall be computed in accordance with the changes so made. The provisions of said section 39K shall govern payments for building projects on which the DCR has made changes, and the provisions of said section 39G shall govern payments for public works projects on which the DCR has made changes.

E. No certificate for payment and no progress payment shall constitute acceptance of Work that is not in accordance with the Contract Documents.

F. The Contractor and all Subcontractors furnishing labor on this Contract agree to furnish certified payroll reports if requested to do so, at no additional expense to the DCR. The DCR may at all reasonable times audit such reports.

5. <u>Periodic Payments (M.G. L. c. 30, sec. 39K) for Building Projects.</u>

For building contracts, the DCR shall make payment to the Contractor in accordance with M.G.L. c. 30, sec. 39K, which provides as follows:

" Within fifteen days (30 days in the case of the commonwealth, including local housing authorities) after receipt from the contractor, at the place designated by the awarding authority if such a place is so designated, of a periodic estimate requesting payment of the amount due for the preceding month, the awarding authority will make a periodic payment to the contractor for the work performed during the preceding month and for the materials not incorporated in the work but delivered and suitably stored at the site (or at some location agreed upon in writing) to which the contractor has title or to which a subcontractor has title and has authorized the contractor to transfer title to the awarding authority upon certification by the contractor that he is the lawful awarding authority and that the materials are free from all encumbrances, but less (1) a retention based on its estimate of the fair value of its claims against the contractor and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and less (3) a retention not exceeding five percent of the approved amount of the periodic payment. After the receipt of a periodic estimate requesting final payment and within sixty-five days after (a) the contractor fully completes the work or substantially completes the work so that the value of the work remaining to be done is, in the estimate of the awarding authority, less than one percent of the original contract price, or (b) the contractor substantially completes the work and the awarding authority takes possession for occupancy, whichever occurs first, the awarding authority shall pay the contractor the entire balance due on the Contract less (1) a retention based on its estimate of the fair value of its claims against the

contractor and of the cost of completing the incomplete and unsatisfactory items of work and less (2) a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, or based on the record of payments by the contractor to the subcontractors under this contract if such record of payment indicates that the contractor has not paid subcontractors as provided in section thirty-nine F. If the awarding authority fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate specified in in G.L. c. 29, §29C , commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the contractor; provided, that no interest shall be due, in any event, on the amount due on a periodic estimate for final payment until fifteen days (twenty-four days in the case of the commonwealth) after receipt of such period estimate from the contractor, at the place designated by the awarding authority if such a place is so designated. The contractor agrees to pay to each subcontractor a portion of any such interest paid in accordance with the amount due each subcontractor.

The awarding authority may make changes in any periodic estimate submitted by the contractor and the payment due on said periodic estimate shall be computed in accordance with the change so made, but such changes or any requirement for a corrected periodic estimate shall not affect the due date for the periodic payment or the date for the commencement of interest charges on the amount of the periodic payment computed in accordance with the changes made, as provided herein; provided, that the awarding authority may, within seven days after receipt, return to the contractor for correction, any periodic estimate which is not in the required form or which contains computations not arithmetically correct and, in that event, the date of receipt of such periodic estimate shall be the date of receipt of the corrected periodic estimate in proper form and with arithmetically correct computations. The date of receipt of a periodic estimate received on a Saturday shall be the first working day thereafter. The provisions of section thirty-nine G shall not apply to any contract for the construction, reconstruction, alteration, remodeling, repair, or demolition of any public building to which this section applies.

All periodic estimates shall be submitted to the awarding authority, or to its designee as set forth in writing to the contractor, and the date of receipt by the awarding authority or its designee shall be marked on the estimate. All periodic estimates shall contain a separate item for each filed sub-trade and each sub-sub-trade listed in sub-bid form as required by specifications and column listing the amount paid to each filed subcontractor as of the date of the periodic estimate is filed. The person making payment for the awarding authority shall add the daily interest provided for herein to each payment for each day beyond the due date of receipt marked on the estimate.

A certificate of the architect to the effect that the contractor has fully or substantially completed the work shall, subject to the provisions of section thirty-nine J, be conclusive for the purposes of this section.

Notwithstanding the provisions of this section, at any time after the value of the work remaining to be done is, in the estimation of the awarding authority, less than 1 per cent of the adjusted contract price, or the awarding authority has determined that the contractor has substantially completed the work and the awarding authority has taken possession for occupancy, the awarding authority may send to the general contractor by certified mail, return receipt requested, a complete and final list of all incomplete and unsatisfactory work items, including, for each item on the list, a good faith estimate of the fair and reasonable cost of completing such item. The general contractor shall then complete all such work items within 30 days of receipt of such list or before the contract completion date, whichever is later. If the general contractor fails to complete all incomplete and unsatisfactory work items within 45 days after receipt of such items furnished by the awarding authority or before the contract completion date, whichever is later, subsequent to an additional 14 days' written notice to the general contractor by certified mail, return receipt requested, the awarding authority may terminate the contract and complete the incomplete and unsatisfactory work items and charge the cost of same to the general contractor and such termination shall be without prejudice to any other rights or remedies the awarding authority may have under the contract. The awarding authority shall note any such termination in the evaluation form to be filed by the awarding authority pursuant to the provisions of section 44D of chapter 149."

6. Payment of Subcontractors (M.G.L. c. 30, sec. 39F).

The Contractor shall make payments to Subcontractors in accordance with the provisions of M.G.L c. 30, sec. 39F, which is quoted in this section below, where applicable. (M.G.L. c. 30, sec. 39F requires that subparagraphs (a) through (h) be set forth in contracts awarded under M.G.L. c. 30, sec. 39M and M.G.L. c. 149, sections 44A-44H; said statute requires that subparagraph (i) be set forth in contracts awarded under M.G.L. c. 149, sections 44A-44H).

"1(a) Forthwith after the general contractor receives payment on account of a periodic estimate, the general Contractor shall pay to each subcontractor the amount paid for the labor performed and the materials furnished by that subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the subcontractor by the general contractor.

(b) Not later than the sixty-fifth day after each subcontractor substantially completes his work in accordance with the Plans and Specifications, the entire balance due under the subcontract less amounts retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the subcontractor; and the awarding authority shall pay that amount to the general contractor. The general contractor shall forthwith pay to the subcontractor the full amount received from the awarding authority less any amount specified in any court proceedings barring such payment and less any amount claimed due from the subcontractor by the general contractor.

(c) Each payment made by the awarding authority to the general contractor pursuant to subparagraphs (a) and (b) of this paragraph for the labor performed and the materials furnished by a subcontractor shall be made to the general contractor for the account of that subcontractor; and the awarding authority shall take reasonable steps to compel the general contractor to make each such payment to each such subcontractor. If the awarding authority has received a demand for direct payment from a subcontractor for any amount which has already been included in a payment to the general contractor or which is to be included in a payment to the general contractor for payment to the subcontractor as provided in subparagraphs (1) and (2) the awarding authority shall act upon the demand as provided in this section.

(d) If, within seventy days after the subcontractor has substantially completed the subcontract work, the subcontractor has not received from the general contractor the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, the subcontractor may demand direct payment of that balance from the awarding authority. The demand shall be by a sworn statement delivered to or sent by certified mail to the awarding authority, and a copy shall be delivered to or sent by certified mail to the general contractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract and a statement of the status of completion of the subcontract work. Any demand made after substantial completion of the subcontract work shall be valid even if delivered or mailed prior to the seventieth day after the subcontractor has substantially completed the subcontract work. Within ten days after the subcontractor has delivered or so mailed the demand to the awarding authority and delivered or so mailed a copy to the general contractor, the general contractor may reply to the demand. The reply shall be by a sworn statement to or sent by certified mail to the awarding authority and a copy shall be delivered to or sent by certified mail to the subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor and of the amount due for each claim made by the general contractor against the subcontractor.

(e) Within fifteen days after receipt of the demand by the awarding authority, but in no event prior to the seventieth day after substantial completion of the subcontract work, the awarding authority shall make direct payment to the subcontractor of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount (i) retained by the awarding authority as the estimated cost of completing the incomplete or unsatisfactory items of work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the general contractor in the sworn reply; provided that the awarding authority shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by subparagraph (d). The awarding authority shall make further direct payments to the subcontractor forthwith after the removal of the basis for deduction from direct payments made as provided in parts (i) and (ii) of this subparagraph.

(f) The awarding authority shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of subparagraph (5) in an interest-bearing joint account in the names of the general contractor and the subcontractor in a bank in Massachusetts selected by the awarding authority or agreed upon by the general contractor and the subcontractor and shall notify the general contractor and the subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the general contractor and the subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demand for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to subparagraph (6) shall be made out of amounts payable to the general

contractor at the time of receipt of a demand for direct payment from a subcontractor and out of amounts which later become payable to the General contractor and in the order of receipt of such demands from subcontractors. All direct payments shall discharge the obligation of the awarding authority to the general contractor to the extent of such payment.

(h) The awarding authority shall deduct from payments to a General contractor amounts which, together with the deposits in interest bearing accounts pursuant to subparagraph (6) are sufficient to satisfy all unpaid balances of demands for direct payment received from subcontractors. All such amounts shall be earmarked for such direct payments, and the subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the general contractor.

(i) If the subcontractor does not receive payment as provided in subparagraph (1) or if the general contractor does not submit a periodic estimate for the value of the labor or materials performed or furnished by the subcontractor and the subcontractor does not receive payment for same when due less the deductions provided for in subparagraph (1), the subcontractor may demand direct payment by following the procedure in subparagraph (4) and the general contractor may file a sworn reply as provided in that same subparagraph. A demand made after the first day of the month following that for which the subcontractor performed or furnished the labor and materials for which the subcontractor seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the general contractor. Thereafter the awarding authority shall proceed as provided in subparagraph (e), (f), (g) and (h).

(2) Any assignment by a subcontractor of the rights under this section to a surety company furnishing a bond under the provisions of section twenty-nine of chapter one hundred forty-nine shall be invalid. The assignment and subrogation rights of the surety to amounts included in a demand for direct payment which are in the possession of the awarding authority, or which are on deposit pursuant to subparagraph (6) shall be subordinate to the rights of all subcontractors who are entitled to be paid under this section and who have not been paid in full.

(3) "subcontractor" as used in this section (l) for contracts awarded as provided in sections forty-four A to forty-four L, inclusive, of chapter one hundred forty-nine shall mean a person who files a sub-bid and received a subcontract as a result of that filed sub-bid or who is approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, (ii) for contracts awarded as provided in paragraph (1) of section thirty-nine M of chapter thirty shall mean a person approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, and (iii) for contracts with the commonwealth not awarded as provided in sections forty-four A to forty-four L, inclusive, of chapter one hundred forty-nine shall also mean a person contracting with the general contractor to supply materials used or employed in a public works project for a price in excess of five thousand dollars.

(4) A general contractor or a subcontractor shall enforce a claim to any portion of the amount of a demand for direct payment deposit as provided in subparagraph (6) by a petition in equity in the superior court against the other and the bank shall not be a necessary party. A subcontractor shall enforce a claim for direct payment or a right to require a deposit as provided in subparagraph (6) by a petition in equity in the superior court against the awarding authority and the general contractor shall not be a necessary party. Upon motion of any party the court shall advance for speedy trial any petition filed as provided in this paragraph. Sections fifty-nine and fifty-nine B of chapter two hundred thirty-one shall apply to such petitions. The court shall enter an interlocutory decree upon which execution shall issue for any part of a claim found due pursuant to sections fifty-nine and fifty-nine B and, upon motion of any party, shall advance for speedy trial the petition to collect the remainder of the claim. Any party aggrieved by such interlocutory decree shall have the right to appeal therefrom as from a final decree. The court shall not consolidate for trial the petition of any subcontractor with the petition of one or more subcontractors or the same general Contract unless the court finds that a substantial portion of the evidence of the same events during the course of construction (other than the fact that the claims sought to be consolidated arise under the same general contract) is applicable to the petitions sought to be consolidated and that such consolidation will prevent unnecessary duplication of evidence. A decree in any such proceeding shall not include interest on the disputed amount deposited more than the interest earned for the period of any such deposit. No person except a subcontractor filing a demand for direct payment for which no funds due the general contractor are available for direct payment shall have a right to file a petition in court of equity against the awarding authority claiming a demand for direct payment is premature and such subcontractor must file the petition before the awarding authority has made a direct payment to the subcontractor and has made a deposit of the disputed portion as provided in part (iii) of subparagraph (5) and in subparagraph (6).

(5) In any petition to collect any claim for which a subcontractor has filed a demand for direct payment the court shall, upon motion of the general contractor, reduce by the amount of any deposit of a disputed amount by the awarding authority as provided in part (iii) of subparagraph (5) and in subparagraph (6) any amount held under a trustee writ or pursuant to a restraining order or injunction."

7. <u>Contracts for Public Works Governed by M.G.L. c. 30, sec. 39G:</u>

The following statutory provision applies only to contracts for public works governed by M.G.L. c. 30, sec. 39G: *"Upon substantial completion of the work required by a Contract with the Owner, or any agency or political subdivision thereof, for the construction, reconstruction, alteration, remodeling, repair or improvement of public ways, including bridges, and other highway structures, sewers and water mains, airports and other public works, the contractor shall present in writing to the awarding authority its certification that the work has been substantially completed. Within twenty-one days thereafter, the awarding authority shall present to the contractor either a written declaration that the work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the Contract sufficient to demonstrate that the work has not been substantially completed. The awarding authority may include with such a list a notice setting forth a reasonable time, which shall not in any event be prior to the Contract completion date, within which the contractor must achieve substantial completion of the work. If the awarding authority fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the contractor's certification within the twenty- one-day period, the contractor's certification shall take effect as the awarding authority's declaration that the work has been substantially completed.*

Within sixty-five days after the effective date of a declaration of a substantial completion, the awarding authority shall prepare and forthwith send to the contractor for acceptance a substantial completion estimate for the quantity and price of the work done and all but one percent retainage of that undisputed part of each work item and extra work item in dispute but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory work items and less the total periodic payments made to date for the work. The awarding authority also shall deduct from the substantial completion estimate an amount equal to the sum of all demands for direct payments filed by subcontractors and not yet paid to subcontractors or deposit d in joint accounts pursuant to section thirty-nine F, but no Contract subject to said section thirty-nine F shall contain any other provision authorizing the awarding authority to deduct any amount by virtue of claims asserted against the Contract by subcontractors, material suppliers or others.

If the awarding authority fails to prepare and send to the contractor any substantial completion estimate required by this section on or before the date herein above set forth, the awarding authority shall pay to the contractor interest on the amount which would have been due to the contractor pursuant to such substantial completion estimate at the rate of three percentage points above the rediscount rate than charged by the Federal Reserve Bank of Boston from such date to the date on which the awarding authority sends that substantial completion estimate to the contractor for acceptance or to the date of payment therefor, whichever occurs first. The awarding authority shall include the amount of such interest in the substantial completion estimate.

Within fifteen days after the effective date of the declaration of substantial completion, the awarding authority shall send to the contractor by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory work items, and, unless delayed by causes beyond his control, the contractor shall complete all such work items within forty-five days after the receipt of such list or before the then Contract completion date, whichever is later. If the contractor fails to complete such work within such time, the awarding authority may, after seven days' written notice to the contractor by certified mail, return receipt requested, terminate the Contract, and complete the incomplete or unsatisfactory work items and charge the cost of same to the contractor.

Within thirty days after receipt by the awarding authority of a notice from the contractor stating that all of the work required by the Contract has been completed, the awarding authority shall prepare and forthwith send to the contractor for acceptance a final estimate for the quantity and price of the work done and all retainage on that work less all payments made to date, unless the awarding authority's inspection shows that work items required by the Contract remain incomplete or unsatisfactory, or that documentation required by the Contract has not been completed. If the awarding authority fails to prepare and send to the contractor the final estimate within thirty days after receipt of notice of completion, the awarding authority shall pay to the contractor interest on the amount

which would have been due to the contractor pursuant to such final estimate at the rate hereinabove provided from the thirtieth day after such completion until the date on which the awarding authority sends the final estimate to the contractor for acceptance or the date or payment therefore, whichever occurs first, provided that the awarding authority's inspection shows that no work items required by the Contract remain incomplete or unsatisfactory. Interest shall not be paid hereunder on amounts for which interest is required to be paid in connection with the substantial completion estimate as hereinabove provided. The awarding authority shall include the amount of the interest required to be paid hereunder in the final estimate.

The awarding authority shall pay the amount due pursuant to any substantial completion or final estimate within thirty-five days after receipt of written acceptance for such estimate from the contractor and shall pay interest on the amount due pursuant to such estimate at the rate hereinabove provided from that thirty-fifth day to the date of payment. Within 15 days, 30 days in the case of the commonwealth, after receipt from the contractor, at the place designated by the awarding authority, if such place is designated, of a periodic estimate requesting payment of the amount due for the preceding periodic estimate period, the awarding authority shall make a periodic payment to the contractor for the work performed during the preceding periodic estimate period and for the materials not incorporated in the work but delivered and suitably stored at the Site, or at some location agreed upon in writing, to which the contractor has title or to which a subcontractor has title and authorized the contractor to transfer title to the awarding authority, upon certification by the contractor that he is the lawful owner and that the materials are free from all encumbrances. The awarding authority shall include with each such payment interest on the amount due pursuant to such periodic estimate at the rate herein above provided from the due date. In the case of periodic payments, the contracting authority may deduct from its payment a retention based on the estimate of the fair value of its claims against the contractor, a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and a retention to secure satisfactory performance of the contractual work not exceeding five per cent of the approved amount of any periodic payment, and the same right to retention shall apply to bonded subcontractors entitled to direct payment under section thirty-nine F of chapter thirty; provided that a five per cent value of all items that are planted in the ground shall be deducted from the periodic payments until final acceptance.

No periodic, substantial completion or final estimate or acceptance or payment thereof shall bar a contractor from reserving all rights to dispute the quantity and amount of, or the failure of the awarding authority to approve a quantity and amount of, all or part of any work item or extra work item.

Substantial completion, for the purposes of this section, shall mean either that the work required by the Contract has been completed except for work having a Contract Price of less than one percent of the then adjusted total Contract Price, or substantially all of the work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the work required by the contract"

8. <u>Liens</u>

Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, delivers to the DCR a complete release of all liens arising out of this Contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he/she has knowledge or information, the releases and receipts include all labor and material for which a lien could be filed; but the Contractor may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the DCR, to indemnify him against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the DCR, all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

9. <u>Final Payment; Release of Claims by Contractor.</u>

Upon Final Acceptance of the Work the Contractor shall be entitled to payment of the balance of the Contract Price. Final payment shall be as provided in this Article above and in accordance with any process set forth in the Special Conditions. The Contractor agrees to execute a Certificate of Final Inspection, Release (with Contractor's own exceptions listed thereon) and Acceptance as a condition precedent to Final Payment. The acceptance by the Contractor of the Final Payment made as aforesaid, or the execution of the Certificate of Final Acceptance by the Contractor, shall constitute a release of the Department of Conservation and Recreation, and every member and agent of it, from all claims of and liability to the Contractor for anything done or furnished for or relating to the

Work, or for any act or neglect of the Department of Conservation and Recreation, or of any person relating to or affecting the Work, except the claim against the Department of Conservation and Recreation for the remainder, if any there be, of the amounts set forth by the Contractor in the Certificate of Final Inspection, Release and Acceptance. Final Acceptance shall not relieve the Contractor of the requirements of Articles IX, XIV, and XV of these General Conditions of the Contract, or of other provisions of this Contract, to the extent that the same are intended to survive Final Acceptance.

ARTICLE IX. GUARANTEES AND WARRANTIES

1. General Warranty.

If at any time during the period of one (1) year from the date of Final Acceptance, any part of such Work shall in the reasonable opinion of the DCR be defective or require replacing or repairing, or damage to other property of the DCR is caused by any defect in the Work, the DCR shall notify the Contractor in writing to make the required repairs or replacements and repair such damage. If the Contractor shall neglect to commence such repairs or replacements to the satisfaction of the DCR within ten (10) days from the date of the giving of such notice, then the DCR may employ other persons to make the same. The Contractor agrees, upon demand, to pay to the DCR all amounts which it expends for such repairs, replacements, and/or damages. During this one-year guarantee period any corrective work shall be performed under all the applicable terms of this Contract, and if Change Orders are issued in accordance with the terms of this Contract, the Contractor shall be entitled to compensation for special insurance, as required. This one-year guarantee shall not limit any express guaranty or warranty provided elsewhere in the Contract.

2. Special Guarantees and Warrantees.

A. The Contractor's obligation to correct Work as set forth in paragraph 1 above is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various sections of the Specifications.

B. Guarantees and warranties required in the various sections of the Specifications must be delivered to the DCR before final payment to the Contractor may be made, or in the case of guarantees and warranties which originate with a subcontractor 's section of the Work, before final payment for that sub-trade or for the phase of Work to which the guarantee or warranty relates.

C. The failure to deliver a required guarantee or warranty shall constitute a failure to fully complete the Work in accordance with the Contract Documents.

ARTICLE X: MISCELLANEOUS LEGAL REQUIREMENTS.

1. Contractor to be Informed.

The Contractor shall inform itself of all existing and future Laws in any manner affecting those engaged or employed in the Work, or the materials used or employed in the Work, or in any way affecting the conduct of the Work, and of all orders and decrees of bodies or tribunals having any applicable jurisdiction or authority over the Work.

2. Compliance with all Laws.

The Contractor shall cause all persons employed in the performance of the Work to comply with all existing and future Laws, including but not limited to those set forth below:

A. Corporate Disclosures. The Contractor if a foreign corporation, shall comply with M.G.L. c. 30, sec. 39L.

B. Veterans Preference. In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the performance of Work in the Commonwealth, preference shall first be given to citizens of the Commonwealth who have been residents of the Commonwealth for at least six months at the commencement of their employment and who are veterans as defined M.G.L. c. 4, sec. 7(43), and who are qualified to perform the work to which the employment relates; and secondly, to citizens of the Commonwealth generally who have been residents of the Commonwealth for at least six months at the commencement of their employment, and if they cannot be obtained in sufficient numbers, then to citizens of the United States.

C. Prevailing Wages. The Contractor shall comply with M.G.L. c. 149, sections 26- 27H. The prevailing wage schedule is found in Exhibit A to the Instructions to Bidders, listing the prevailing minimum wage rates that must be paid to all workers employed in the Work. The DCR is not responsible for any errors, omissions, or misprints in said schedule. Such

Schedule shall continue to be the minimum rate of wages payable to workers employed in the Work throughout the term of this Contract, subject to the exceptions provided in M.G.L c. 149, sections 26-27H. The Contractor shall not have any claim for extra compensation from the Department of Conservation and Recreation if the actual wages paid to workers employed in the Work exceeds the rates listed on the schedule or as otherwise provided by law. The Contractor shall cause a copy of said Schedule to be kept in a conspicuous place at the Site during the term of the Contract. If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L c.149, sec. 34B).

D. Payroll Records and Statement of Compliance. The Contractor shall comply and shall cause its Subcontractors to comply with Massachusetts General Law c. 149, sec. 27B, which requires that a true and accurate record be kept of all persons employed on a project for which the prevailing wage rates have been provided. The Contractor and all Subcontractors shall keep these records and preserve them for a period of three years from the date of completion of the Contract. Such records shall be open to inspection by any authorized representative of the Department of Conservation and Recreation at any reasonable time, and as often as may be necessary. The Contractor shall, and shall cause its subcontractors to, submit weekly copies of their weekly payroll records to the DCR. In addition, the Contractor and each Subcontractor shall furnish to the Executive Department of Labor within fifteen days after completion of its portion of the Work a signed statement in the form required by the DCR.

E. Vehicle operators. If the Director of the Department of Labor and Workforce Development has established a Schedule of wage rates to be paid to the operators of trucks, vehicles or equipment for the Work, the Contractor shall be obligated to pay such operators at least the minimum wage rate contained on such Schedule. (See M.G.L. c.149, sections 26-27H).

F. Eight Hour Day. The Contractor shall comply with M.G.L. c. 149, sections 30 and 34, which provide that no laborer, workman, mechanic, foreman or inspector working within the Commonwealth in the employ of the Contractor, subcontractor or other person doing or contracting to do the whole or part of the Work shall be required or permitted to work more than eight hours in any one day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of extraordinary emergency.

G. Timely Payment of Wages. The Contractor shall comply with and shall cause its Subcontractors to comply with M.G.L. c. 149, sec. 148 which requires the weekly or biweekly payment of employees within six days of the end of the pay period during which wages were earned if employed for five or six days of a calendar week, and within other periods of time under certain circumstances as set forth therein.

H. Lodging, etc. The Contractor shall comply with, and shall cause its Subcontractors to comply with, M.G.L. c. 149, sec. 25 which provides that every employee under this Contract shall lodge, board, and trade where and with whom he elects, and neither the Contractor nor his agents or employees shall, either directly or indirectly, require as a condition of the employment of any person that the employee shall lodge, board, or trade at a particular place or with a particular person.

I. Truck Rates. The use by the Contractor of trucks or other motor vehicles hired from either common or contract motor carriers in the course of performance of this Contract is subject to such minimum rates and charges, and rules and regulations as may from time to time be promulgated by the Department of Public Utilities of the Commonwealth of Massachusetts or other agency of the State or Federal government which may be authorized by law to set rates or otherwise regulate the use of such vehicles. The Contractor expressly assumes the risk of any additional expense that may arise by reason of any change in such minimum rates and charges, and rules and regulations, and shall be entitled to no additional compensation or reimbursement by reason thereof.

J. Anti-Boycott Covenant (Executive Order #130). The Contractor warrants, represents and agrees that during the time this Contract is in effect, neither it nor any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b) (3) and (4) of the Internal Revenue Code of 1954, as amended, or engages in conduct declared to be unlawful by M.G.L. c. 151E, sec. 2. If there shall be a breach in the warranty, representation or agreement contained in this paragraph, then without limiting such other rights as it may have the DCR shall be entitled to rescind this contract. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the Contractor or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the ownership interests of the Contractor; or which directly or indirectly owns at least 51% of the ownership interests of the Contractor.

K. Contractor's Agreements with Suppliers--Anti-Boycott and Anti-Discrimination Provisions.

(1) The Contractor shall not purchase or rent any materials, equipment, machinery, vehicles or supplies for or in connection with the Work from any person or entity who does not sign, under pains and penalties of perjury, a certificate that recites: “the undersigned warrants, represents and agrees that during the time its agreement with (insert contractor’s name) is in effect for materials, supplies or equipment to be used in connection with the Department of Conservation and Recreation Contract No. (insert contract number), neither the undersigned or any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b)(3) and (4) of the Internal Revenue Code of 1954, as amende3d, or engages in conduct declared to be unlawful by Section 2 of Chapter 151E of the Massachusetts General Laws. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the undersigned or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the ownership interests of the undersigned; or which directly or indirectly owns at least 51% of the ownership interests of the undersigned.”

(2) The DCR shall not be obligated to pay the Contractor for the cost of any materials, supplies, or equipment purchased or rented from any individual or entity from whom the Contractor has not previously obtained and delivered to the DCR the certificate that the previous paragraph requires. The Contractor will immediately terminate its contract with any supplier who breaches the warranty, representation and agreement contained in the previous paragraph.

(3) The Contractor shall include in the Contractor's agreement with any person or entity from whom the Contractor intends to purchase or rent any materials, equipment, machinery, vehicles or supplies for or in connection with the Work, (a) a notice that this Contract obligates the Contractor to terminate the supply contract upon discovery of such breach of the sworn certificate delivered under subparagraph (1) and such termination shall be without liability to the Contractor or the DCR and (b) a provision which states: "The Governor or his designee, the secretary of administration and finance, and the state auditor or his designee shall have the right at reasonable times and upon reasonable notice to examine the books, records and other compilations of the undersigned vendor which pertain to the performance and requirements of this agreement to provide materials of any nature to the undersigned contractor in connection with DCR Contract No. (insert contract number)."

L. Access to Contractor's Records (Executive Order #195). The Governor or his/her designee, the secretary of administration and finance, and the state auditor or his/her designee shall have the right at reasonable times and upon reasonable notice to examine the books, records, and other compilations of data of the Contractor which pertain to the performance and requirements of this Contract.

ARTICLE XI: CONTRACTOR'S ACCOUNTING METHOD REQUIREMENTS (M.G.L. c. 30, sec. 39R)

1. Definitions.

The words defined herein shall have the meaning stated below whenever they appear in this Article XI:

--"Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a Contract pursuant to M.G.L. c. 30, sec. 39M, and M.G.L. c. 149, sections 44A-H.

--"Contract" means any Contract awarded or executed pursuant to M.G.L. c. 30, sec. 39M, M.G.L. c. 149, sections 44A-H.

--"Independent Certified Public Account" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his/her residence or principal office and who is in fact independent. In determining whether an accountant is independent with aspect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the awarding authority.

--"Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

--"Audit", when used regarding financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to

express an opinion for stated reasons.

Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

2. Record Keeping.

A. The Contractor shall make, and keep for at least six years after final payment, books, records, and accounts that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.

B. Until the expiration of six years after final payment, the Inspector General and the DCR shall have the right to examine any books, documents, papers or records of the Contractor and Subcontractors that directly pertain to and involve transactions relating to the Contractor and Subcontractors.

C. The Contractor shall describe any change in the method of maintaining records or recording transactions which materially affects any statements filed with the DCR including the date of the change and reasons therefor and shall accompany said description with a letter from the Contractor's independent certified public accountant approving or otherwise commenting on the changes.

D. The Contractor represents that it has, prior to the execution of the Contract, filed a statement of management on internal accounting controls as set forth in Section 3 below.

E. The Contractor represents that it has, prior to the execution of the Contract, filed an audited financial statement for the most recent completed fiscal year as set forth in section 4 below and will continue to file such statement annually during the term of the Contract.

3. Statement of Management Controls.

A. The Contractor shall file with the DCR a statement of management as to whether the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:

(1) transactions are executed in accordance with management's general and specific authorization.

(2) transactions are recorded as necessary: (a) to permit preparation of financial statements in conformity with generally accepted accounting principles, and (b) to maintain accountability for assets.

(3) access to assets is permitted only in accordance with management's general or specific authorization; and

(4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

B. The Contractor shall file with the DCR a statement prepared and signed by an independent certified public accountant, stating that the accountant has examined the statement of management on internal accounting controls, and expressing an opinion as to:

(1) whether the representations of management in response to subparagraph 3 above are consistent with the results of management's evaluation of the system of internal accounting controls; and

(2) whether such representations of management are reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statement.

4. Annual Financial Statement.

A. Every Contractor awarded a contract under M.G.L. c. 30, sec. 39M or M.G.L. c. 149, sections 44A-44H shall annually file with the Commissioner of the Division of Capital Asset Management and Maintenance during the term of the Contract a financial statement prepared by an independent certified public accountant based on an audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the DCR upon request.

B. The office of Inspector General and the DCR shall have the right to enforce the provisions of this Article. A Contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to M.G.L. c. 149, sec. 44C.

5. Bid Pricing Materials.

The Contractor shall save the written calculations, pricing information, and other data that the Contractor used to calculate the bid that induced the DCR to enter this Contract (the "Bid Pricing Materials") for at least six years after the DCR makes final payment under this Contract.

ARTICLE XII: EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION, AND AFFIRMATIVE ACTION PROGRAM.

This Contract includes the provisions of the DCR's "Equal Employment Opportunity, Non-Discrimination, and

Affirmative Action Program," attached as Appendix A to these General Conditions of the Contract and incorporated herein by reference.

ARTICLE XIII: GOALS FOR PARTICIPATION BY MINORITY BUSINESS ENTERPRISES AND WOMEN BUSINESS ENTERPRISES

This Contract includes the provisions of the DCR's ”Goals for Participation by Minority Business Enterprises and Women Business Enterprises (Executive Order 390), attached as Appendix B to these General Conditions, and as set forth in Section 8 of the Instructions to Bidders, and incorporates same herein by reference**.**

ARTICLE XIV: INSURANCE REQUIREMENTS

The Contractor shall carry insurance, in the amounts and types specified in Section 7 of the Instructions for Bidders for this Contract and shall comply with all provisions relating to insurance set forth in said Section 7.

ARTICLE XV: INDEMNIFICATION

1. Generally.

To the fullest extent permitted by law, the Contractor shall indemnify, defend (with counsel subject to the supervision of the Attorney General of the Commonwealth of Massachusetts as required by M.G.L. c. 12, sec. 3) and hold harmless the Commonwealth of Massachusetts, its Department of Conservation and Recreation, and its officers, agents, divisions, employees, representatives, successors and assigns from and against all claims, damages, losses and expenses, including but not limited to court costs and attorneys’ fees, arising out of or resulting from the performance of the Work, including but not limited to those arising or resulting from:

-labor performed or furnished and/or materials used or employed in the performance of the Work.
-violations by the Contractor, any subcontractor, or by any person directly or indirectly employed or used by any of them in the performance of the Work or anyone for whose acts any of them may be liable (Contractor, subcontractor and all such persons herein collectively called "Contractor's Personnel") of any Laws.
-violations of any provision of this Contract by any of Contractor's Personnel.
-injuries to any persons or damage to any property in connection with the Work.
-any act, omission, or neglect of Contractor's Personnel.

The Contractor shall be obligated as provided above, regardless of whether such claims, damages, losses and/or expenses are caused in whole or in part by the actions or inactions of a party indemnified hereunder. In all claims by Contractor's Personnel against parties indemnified hereunder, the Contractor's indemnification obligation set forth above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Article XV.

2. DCR's Actions.

The obligations of the Contractor under Section 1 above shall not extend to the liability of the DCR, its agents or employees, arising out of (i) the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications by the DCR, or (ii) the giving of or the failure to give directions or instructions by the DCR, its agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

3. Survival.

The provisions of this Article XV are intended to survive Final Acceptance and/or any termination of this Contract.

ARTICLE XVI: PERFORMANCE AND PAYMENT BONDS

1. Contractor Bonds.

A. The Contractor shall provide performance and payment (labor and materials) bonds in the form provided by the DCR, executed by a surety licensed by the Commonwealth of Massachusetts Division of Insurance. Each such bond shall be in the amount of the Contract Price.

B. If at any time prior to final payment to the Contractor, the Surety:

-is adjudged bankrupt or has made a general assignment for the benefit of its creditors.
-has liquidated all assets and/or has made a general assignment for the benefit of its creditors.
-is placed in receivership.
-otherwise petitions a state or federal court for protection from its creditors; or
-allows its license to do business in Massachusetts to lapse or be revoked.

then the Contractor shall, within 21 days of any such action listed above, provide the DCR with new performance and payment bonds as described in Paragraph A above. Such bonds shall be provided solely at the Contractor's expense.

2. Subcontractor Bonds.

The Contractor is responsible for the costs of the payment and performance bonds of the sub-contractors for the full amount of their respective Subcontracts.

ARTICLE XVII: TERMINATION OF CONTRACT

1. Termination for Cause.

A. The DCR may without prejudice to any other right or remedy deem this Contract terminated for cause if any of the following defaults shall occur and not be cured within five days (5) days after the giving of notice thereof by the DCR to the Contractor and any surety that has given bonds in connection with this Contract:

(1) The Contractor has filed a petition, or a petition has been filed against the Contractor with its consent, under any federal or state law concerning bankruptcy, reorganization, insolvency or relief from creditors, or if such a petition is filed against the Contractor without its consent and is not dismissed within sixty (60) days; or if the Contractor is generally not paying its debts as they become due; or if the Contractor becomes insolvent; or if the Contractor consents to the appointment of a receiver, trustee, liquidate, custodian or the like of the Contractor or of all or any substantial portion of its assets and such appointment or possession is not terminated within sixty (60) days; or if the Contractor makes an assignment for the benefit of creditors;

(2) The Contractor refuses or fails, except in cases for which extension of time is provided under this Contract's express terms, to supply enough properly skilled workers or proper materials to perform its obligations under this Contract, or the DCR has determined that the rate of progress required for the timely completion of the Work is not being met.

(3) The Contractor fails to make prompt payment to Subcontractors or for materials, equipment, or labor.

(4) All or a part of the Work has been abandoned.

(5) The Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims thereunder, without the prior written consent of the Department of Conservation and Recreation, except as expressly permitted in this Contract.

(6) The Contractor has failed to comply with Laws.

(7) The Contractor fails to maintain, or provide to the DCR evidence of the insurance or bonds required by this Contract, or

(8) The Contractor has failed to prosecute the Work or any portion thereof to the standards required under this Contract or has otherwise breached any material provision of this Contract.

B. The DCR shall give the Contractor, and any surety notice of such termination for cause, but the giving of notice of such termination shall not be a condition precedent or after the termination's effectiveness. In the event of such termination, and without limiting any other available remedies, the DCR may, at its option:

(1) hold the Contractor and its sureties liable in damages for a breach of Contract.

(2) notify the Contractor to discontinue all work, or any part thereof, and the Contractor shall discontinue all work, or any part thereof, as the Department of Conservation and Recreation may designate.

(3) complete the Work, or any part thereof, and charge the expense of completing the Work or part thereof, to the Contractor.

(4) require the surety or sureties to complete the Work and perform all the Contractor's obligations under this Contract.

If the DCR elects to complete all or any portion of the Work as specified in (3) above, it may take possession of all materials, equipment, tools, machinery, implements owned by the Contractor at or near the Site and finish the Work at the Contractor's expense by whatever means the DCR may deem expedient; and the Contractor shall cooperate

at its expense in the orderly transfer of the same to a new contractor or to the DCR as directed by the DCR. In such case the DCR shall not make any further payments to the Contractor until the Work is finished. The Department of Conservation and Recreation shall not be liable for any depreciation, loss, or damage to said materials, machinery, implements or tools during said use and the Contractor shall be solely responsible for their removal from the Site after the Department of Conservation and Recreation has no further use for them. Unless so removed within fifteen days after notice to the Contractor to do so, they may be sold at public auction, after publication of notice thereof at least twice in any newspaper published in the county where the Work is being performed, and the proceeds credited to the Contractor's account; or they may, at the option of the DCR, be stored at the Contractor's expense subject to a lien for the storage charges.

C. Damages and expenses incurred under paragraph B above shall include, but not be limited to, costs for the DCR's extra services and Project representative services required, in the opinion of the DCR, to successfully inspect and administer the construction contract through final completion of the Work.

D. Expenses charged under paragraph B above may be deducted and paid by the DCR out of any moneys then due or to become due the Contractor under this Contract.

E. All sums, damages, and expenses incurred by the Department of Conservation and Recreation to complete the Work shall be charged to the Contractor. In case the damages and expenses charged are less than the sum that would have been payable under this Contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference. In case such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Department of Conservation and Recreation.

2. Termination For Convenience.

A. The DCR may terminate this Contract for convenience even though the Contractor is not in default by giving notice to the Contractor specifying in said notice the date of termination.

B. In case of such termination without cause, the Contractor shall be paid:
(1) all sums due and owing under this Contract through the date of termination, including any retainage withheld to the date of termination, less any amount which the DCR determines is necessary to correct or complete the Work performed to the date of termination; plus (2) a reasonable sum to cover the expenses which the Contractor would not have incurred but for the early termination of the Contract, such as demobilization of the work force, restocking charges, and termination fees payable to Subcontractors.

C. The payment provided in paragraph B above shall be considered to fully compensate the Contractor, and any consultants, Subcontractors, and suppliers, for all claims and expenses directly or indirectly attributable to the termination, including any claims for lost profits.

3. Contractor's Duties Upon Termination for Convenience.

Upon termination of this Contract for convenience as provided in Section 2 of this Article, the Contractor shall: (1) stop the Work; (2) stop placing orders and Subcontracts in connection with this Contract; (3) cancel all existing orders and Subcontracts; (4) surrender the Site to the DCR in a safe condition; (5) transfer to the DCR all materials, supplies, work in process, appliances, facilities, equipment and machinery of this Contract, and all plans, Drawings, Specifications and other information and documents used in connection with this Contract.

ARTICLE XVIII: MISCELLANEOUS PROVISIONS

1. No Assignment by Contractor.

The Contractor shall not assign by power of attorney or otherwise, or sublet or subcontract, the Work, or any part thereof, without the previous written consent of the DCR and shall not, either legally or equitably, assign any of the moneys payable under this Contract, or Contractor's claims hereunder, unless with the like consent of the DCR, whether said assignment is made before, at the time of, or after the execution of the Contract. The Contractor shall remain responsible for satisfactory performance of all Work sublet or assigned. Consent of the DCR shall not be deemed to constitute a representation or waiver of any right hereunder by the DCR as to the qualifications or the responsibility of the Contractor or Subcontractor(s).

2. Non-Appropriation.

The Commonwealth certifies that at the time of the execution of this Contract, sufficient appropriations exist and shall be encumbered to fund the Contract Price. Payments are subject to appropriation and shall be made only for work performed in accordance with the terms of this Contract. The Contractor shall not be obligated to perform,

and shall not perform, work outside the scope of this Contract without an appropriate amendment to this Contract, and a sufficient appropriation(s) to support such additional work. The Commonwealth may immediately terminate or suspend this Contract if the appropriation(s) funding this Contract is eliminated or reduced to an amount which will be insufficient to support anticipated future obligations under this Contract. Such termination shall be deemed a termination for convenience subject to the provisions of paragraph 2 of Article XVII of this Contract.

3. Claims by Others Not Valid.
No person other than the Contractor and the surety on any bond given pursuant to the terms of this Contract shall acquire any interest in this Contract or any claim against the DCR hereunder, and no claim by any other person shall be valid except as provided in M.G.L. c. 30, sec. 39F of the General Laws.

4. No Personal Liability of Public Officials.
No public official, employee, or agent of the DCR shall have any personal liability for the obligations of the DCR set forth in this Contract.

5. Severability.
The provisions of this Contract are severable, and if any of these provisions shall be held unconstitutional or unenforceable by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the other provisions of this Contract.

6. Choice of Laws.
This Contract shall be governed by the laws of the Commonwealth of Massachusetts for all purposes, without regard to its laws on choice of law. All proceedings under this Contract or related to the Project shall be brought in the courts of the Commonwealth of Massachusetts.

7. Standard Forms.
Unless directed otherwise in writing by the DCR, the Contractor shall use the standard forms in use by the Department of Conservation and Recreation.

8. No Waiver of Subsequent Breach.
No waiver of any breach or obligation of this Contract shall constitute a waiver of any other or subsequent breach or obligation.

9. Remedies Cumulative.
All remedies of the DCR provided in this Contract shall be construed as cumulative and may be exercised simultaneously or in any order as determined by the DCR in its sole discretion. The DCR shall also be entitled as of right to specific performance and equitable relief including the right to an injunction against any breach of any of the provisions of this Contract

10. Notices.
Notices to the Contractor shall be deemed given when hand delivered to the Contractor's temporary field office at or near the Site, or when deposited in the U.S. mail addressed to the Contractor at the Contractor's address specified in the Department of Conservation and Recreation - Contractor Agreement, or when delivered by courier to either location. Unless otherwise specified in writing by the DCR, notices and deliveries to the DCR shall be effective only when delivered to the DCR at the address specified in the Department of Conservation and Recreation - Contractor Agreement and date-stamped at the reception desk or for which a receipt has been signed by the agent or employee designated by the DCR to receive official notices.

APPENDIX A to General Conditions of the Contract

The following provisions from Article XII of the General Conditions of the Contract where DCR is the Awarding Authority.

EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION, AND AFFIRMATIVE ACTION

PROGRAM.

1. Compliance Generally.

For purpose of this Article, "minority" refers to Asians, Blacks, Western Hemisphere Hispanics, Native Americans, and Cape Verdeans; "Commission" refers to the Massachusetts Commission Against Discrimination. During the performance of this Contract, the Contractor and all its Subcontractors (hereinafter collectively referred to as the Contractor) shall comply with all applicable equal employment opportunity, non-discrimination and affirmative action requirements, including but not limited to the following:

2. Non-Discrimination and Affirmative Action.

A. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, sexual orientation, or sex. The aforesaid provision shall include, but not be limited to, the following: employment rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship. The Contractor shall comply with the provisions of MGL, c. 151B and all other applicable anti-discrimination and equal opportunity laws.

B. The Contractor shall comply with the provisions of Executive Order No. 478 entitled Revoking and Superseding Executive Orders Numbers 253 and 452, with respect to affirmative action programs for handicapped individuals, which is herein incorporated by reference and made a part of this Contract.

C. In connection with the performance of the Work, the Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory religious creed, national origin, age, sexual orientation, or sex and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age, sexual orientation, or sex. A purpose of this provision is to fully ensure possible an adequate supply of skilled tradesmen for future public construction projects.

D. If the Contractor shall use any subcontractor on any work performed under this Contract, the Contractor shall take affirmative steps to negotiate with qualified minority and women subcontractors. These affirmative steps shall cover both pre-bid and post-bid periods. It shall include notification to the State Office of Minority and Women Business Assistance or its designee, while bids are in preparation, of all products, work, or services for which the Contractor intends to negotiate bids. In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this Contract relative to non-discrimination and affirmative action.

E. As part of its obligation of remedial action under this Article, the Contractor shall maintain on this project not less than the percent ratio set forth in the Owner – Contractor Agreement of minority employee worker hours to total worker hours in each job category including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in MGL, c. 149, Sec. 44F.

F. In the hiring of minority journeypersons, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the Commission, traditional referral methods utilized by the construction industry, and referrals from agencies, not more than three in number at any one time, designated by the Liaison Committee or the Awarding Authority.

3. Liaison Committee, Reports and Records.

A. At the option of the Awarding Authority, there may be established for the term of this Contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one

representative each from the Awarding Authority, the Commission and such other representatives as may be designated by the Commission in conjunction with the Awarding Authority. The Contractor (or his agent, if any, designated by him as the on-site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

B. The Contractor shall prepare projected staffing tables on a quarterly basis. These shall be broken down into projections, by week, of workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and when updated, to the Awarding Authority and Liaison Committee. The Contractor shall prepare weekly reports in a form approved by the Awarding Authority of hours worked in each trade by each employee, identified as minority or non-minority. Copies of these shall be provided at the end of each such week to the Awarding Authority and to the Liaison Committee.

C. Records of employment referral orders, prepared by the Contractor, shall be made available to the Awarding Authority and to the Liaison Committee on request.

D. A designee of the Awarding Authority and a designee of the Liaison Committee shall each have right to access to the Site.

E. The Contractor shall comply with the provisions of MGL, c. 151B as amended, of the Massachusetts General Laws, both of which are herein incorporated by reference and made a part of this Contract.

F. The Contractor shall provide all information and reports required by the Awarding Authority or the Commission on forms and in accordance with instructions issued by either of them and will permit access to its facilities and any books, records, accounts, and other sources of information which may be determined by the Awarding Authority or the Commission to affect the employment of personnel. This provision shall apply only to information pertinent to the Owner's supplementary affirmative action Contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Awarding Authority or the Commission as appropriate and shall set forth what efforts he has made to obtain the information.

4. <u>Sanctions</u>.

A. Whenever the Awarding Authority, the Commission, or the Liaison Committee believes the Contractor, or any Subcontractor may not be operating in compliance with the terms of this Article, the Commission shall directly, or through its designated agent, conduct an appropriate investigation, and may confer with the parties to determine if such Contractor is operating in compliance with the terms of this Article. If the Commission or its agent finds the Contractor or any Subcontractor not in compliance, it may make a preliminary report on non-compliance and notify such Contractor in writing of such steps as will in the judgment of the Commission or its agent bring such Contractor into compliance. If such Contractor fails or refuses to fully perform such steps, the Commission may make a final report of non-compliance and recommend to the Awarding Authority the imposition of one or more of the sanctions listed below. If, however, the Commission believes the Contractor or any Subcontractor has taken or is taking every possible measure to achieve compliance, it shall not make a final report of non-compliance. Within fourteen days of the receipt of the recommendations of the Commission, the Awarding Authority shall move to impose one or more of the following sanctions, as it may deem appropriate to attain full and effective enforcement:

(l) The recovery by the Awarding Authority from the Contractor of 1/100 of 1% of the Contract award price or $1,000 whichever sum is greater, in the nature of liquidated damages or, if a Subcontractor is in non-compliance, the recovery by the Awarding Authority from the Contractor, to be assessed by the Contractor as a back charge against the subcontractor, of 1/10 of 1% of the sub-contract price, or $400 whichever sum is greater, in the nature of liquidated damages, for each week that such party fails or refuses to comply.

(2) The suspension of any payment or part thereof due under the Contract until such time as the Contractor or any subcontractor can demonstrate his compliance with the terms of the Contract.

(3) The termination, or cancellation, of the Contract, in whole or in part, unless the Contractor or any Subcontractor can demonstrate within a specified times his compliance with the terms of the contract.
(4) The denial to the Contractor or any subcontractor of the right to participate in any future contracts awarded by the Awarding Authority for a period of up to three years.

B. If any time after the imposition of one or more of the above sanctions a Contractor can demonstrate that it follows this Article, the Contractor may request the Awarding Authority, in consultation with the Commission, to suspend the sanctions conditionally, pending a final determination by the Commission as to whether the Contractor complies. Upon final determination of the Commission, the Awarding Authority, based on the recommendation of the Commission, shall either lift the sanctions or reimpose them.

C. Sanctions recommended by the Commission and enumerated under Section 4 above shall not be imposed by the Awarding Authority except after an adjudicatory proceeding, as that term is used in MGL, c. 30A, has been conducted. No investigation by the Commission or its agent shall be initiated without prior notice to the Contractor.

D. Notwithstanding the provisions of 4A-4C above, if the Awarding Authority determines after investigation that the Contractor or any Subcontractor is not in compliance with the terms of this Article, it may suspend any payment or portion thereof due under the Contract until the contractor demonstrates to the satisfaction of the Awarding Authority compliance with the terms of this Article. This temporary suspension of payments by the Awarding Authority is separate from the sanctions set forth in Section 4A-4C of this Article above, which are determined by MCAD and recommend to the Awarding Authority. Payment may be suspended only after the Contractor and any other interested party shall have been given the opportunity to present evidence in support of its position at an informal hearing held by the Awarding Authority, and the Awarding Authority has concluded upon review of all the evidence that such penalty is justified. Payment shall not be suspended if the Awarding Authority finds that the Contractor made its best efforts to comply with this Article, or that some other justifiable reason exists for waiving the provisions of this Article in whole or in part.

APPENDIX B to General Conditions of the Contract

The following provisions from Article XIII of the General Conditions of the Contract where DCR is the Awarding Authority.

GOALS FOR PARTICIPATION BY MINORITY BUSINESS ENTERPRISES AND WOMEN BUSINESS ENTERPRISES (EXECUTIVE ORDER 390, MGL, c. 7, s. 40N)

1. Goals.

A. The goals for minority business enterprise and women business enterprise participation established for this Contracts are as set forth in the Owner – Contractor Agreement.

B. The Contractor and all Subcontractors, sub-subcontractors, and materials suppliers shall comply with all the terms and conditions of this Article, which include the provisions pertaining to M/WBE participation set forth in the Owner – Contractor Agreement to meet the M/WBE participation goals established for this Contract.

2. M/WBE Participation Credit.

A. If the Contractor is itself an MBE or WBE, M/WBE participation credit will be given in an amount equal to the entire Contract Price. If the Contractor is not an MBE or WBE then M/WBE participation credit will be given for the value of the Work that is performed by each MBE or WBE subcontractor or subcontractor.

B. If the Contractor is a joint venture with one or more M/WBE joint venturers, M/WBE participation credit shall be given to the joint venture as follows:
(1) If the joint venture is certified by SOMBWA as an MBE or WBE, M/WBE participation credit shall be given in an amount equal to the Contract Price.
(2) If the joint venture is not certified as an MBE or WBE by SOMWBA, M/WBE participation credit shall be given to the joint venture for the value of the Work that is performed by the M/WBE joint ventures(s), and for the value of the Work that is performed by each MBE or WBE subcontractor or sub-subcontractor.

C. MBE participation credit shall be given for the work performed by MBEs only, and WBE participation credit shall be given for the work performed by WBEs only. MBE participation may not be substituted for WBE participation, nor may WBE participation be substituted for MBE participation.

3. Establishing M/WBE Status.

A. A minority-owned business shall be considered an MBE only if it has been certified as a minority business enterprise by the State Office of Minority and Women Business Assistance ("SOMWBE").

B. A woman-owned business shall be considered a WBE only if it has been certified as a woman business enterprise by SOMWBA.

C. Certification as a disadvantaged business enterprise ("DBE"), certification as an M/WBE by any agency other than SOMWBA, or submission of an application to SOMWBA for certification as an M/WBE shall not confer M/WBE status on a firm for the purposes of this Contract.

4. Subcontracts with M/WBEs.

Within thirty (30) days after the award of this Contract, the Contractor shall (i) execute a subcontract with each M/WBE Subcontractor which has executed a Letter of Intent approved by the Awarding Authority, (ii) cause its Subcontractors to execute a sub-subcontract with each M/WBE sub-subcontractor, and (iii) furnish the Awarding Authority with a signed copy of each such subcontract and sub-subcontract.

5. Performance of Contract Work by M/WBEs.

A. The Contractor shall not perform with its own organization or subcontract or assign to any other firm work designated to be performed by any W/MBE in the Letters of Intent or Schedule of M/WBE Participation without the prior Approval of the Awarding Authority, nor shall any M/WBE assign or subcontract to any other firm or permit any other firm to perform any of its M/WBE Work without the prior Approval of the Awarding Authority. Any such unapproved assignment, subcontracting, sub-subcontracting, or performances of M/WBE Work by others shall be a change in the M/WBE Work for the purposes of this Contract. The Awarding Authority WILL NOT APPLY TO THE M/WBE PARTICIPATION GOALS(S) ANY SUMS ATTRIBUTABLE TO SUCH UNAPPROVED ASSIGNMENTS, SUB-CONTRACTS, SUB-SUBCONTRACTS, OR PERFORMANCE OF M/WBE WORK BY OTHERS.

B. The Contractor shall be responsible for monitoring the performance of M/WBE Work to ensure that each scheduled M/WBE performs its own M/WBE Work with its own workforce.

C. The Contractor and each M/WBE shall provide the Awarding Authority with all information and documentation that the Awarding Authority determines is necessary to ascertain whether an M/WBE has performed its own M/WBE Work. At the discretion of the Awarding Authority, failure to submit such documentation to the Awarding Authority shall establish conclusively for the purpose of giving M/WBE participation credit under this Contract that such M/WBE did not perform such work.

6. Notification of Changes in M/WBE Work.

A. If any time during the performance of the Contract the Contractor determines or has reason to believe that a scheduled M/WMBE is unable to unwilling to perform its M/WBE Work, or that there has been or will be a change in any M/WMBE Work, or that the Contractor will be unable to meet the M/WBE participation goal(s) for this Contract for any reason, the Co0ntractor shall immediately notify the Awarding Authority Contract Compliance Office in writing of such circumstances.

B. Any notice of a change in M/WBE Work pursuant to subparagraph "A: above shall include a revised Schedule of M/WBE Participation, and additional or amended Letters of Intent and subcontracts.

7. Actions Required if there is a Reduction in M/WBE Participation.

A. In the event there is a change or reduction in any M/WBE Work which will result in the Contractor failing to meet the M/WBE participation goal(s) for this Contract, other than a reduction in

M/WBE Work resulting from a Change Order initiated by the Awarding Authority, then the Contractor shall immediately undertake a diligent, good faith effort to make up the shortfall in M/WBE participation as follows:
(1) The Contractor shall identify all items of the Work remaining to be performed under the Contract that may be made available for subcontracting to W/MBEs. The Contractor shall send a list of such items of work to the Awarding Authority, together with a list of the remaining items of the Work that was not made available to M/WBEs and the reason for not making such work available for subcontracting to M/WBEs.
(2) The Contractor shall send written notices soliciting proposals to perform the items of the Work that may be made available for subcontracting to W/MBEs to all W/MBEs qualified to perform such work. The Contractor shall advise the Awarding Authority of (i) each W/MBE solicited, and (ii) each W/MBE listed in the SOMWBA directory under the applicable trade category who was not solicited and the reasons, therefore. The Contractor shall also advise the Awarding Authority of the dates notices were mailed and provide a copy of the written notice(s) sent.
(3) The Contractor shall make reasonable efforts to follow up the written notices sent to M/WBEs with telephone calls or personal visits to determine with certainty whether the M/WBEs were interested in performing the work. Phone logs or other documentation must be submitted to the Awarding Authority evidencing this effort.
(4) The Contractor shall make reasonable efforts to assist M/WBEs that need assistance in obtaining insurance, bonds, or lines of credit to perform work under the Contract and shall provide the Awarding Authority with evidence that such efforts were made.

(5) The Contractor shall provide the Awarding Authority with a statement of the response received from each M/WBE solicited, including the reason for rejecting any M/WBE who submitted a proposal.
(6) The Contractor shall take any additional measures reasonably requested by the Awarding Authority to meet the M/WBE participation goal(s) established for this Contract, including, without limitation, placing advertisements in appropriate media and trade association publications announcing the Contractor's interest in obtaining proposals from M/WBEs, and/or sending written notification to M/WBE economic development assistance agencies, trade groups and other organizations notifying them of the project and of the work available to be subcontracted by the Contractor to M/WBEs.
B. If the Contractor is unable to meet the M/WBE participation goals for this Contract after complying fully with each of the requirements of paragraph "A" above, and the Contractor is otherwise in full compliance with the terms of this Article, the Awarding Authority may reduce the M/WBE participation goals for this Contract to the extent that such goals cannot be achieved.

8. <u>Suspension of Payment and/or Performance for Noncompliance</u>.

A. If at any time during the performance of this Contract, the Awarding Authority determines or has reason to believe that (1) there has been a change or reduction in any M/WBE Work which will result in the Contractor failing to meet the M/WBE participation goal(s) for this Contract, other than a reduction in M/WBE Work resulting from a change in the Contract work ordered by the Awarding Authority, and (2) the Contractor has failed to comply fully with all of the terms and conditions of paragraphs 1 through 7 above, the Awarding Authority may:
(1) suspend payment to the Contractor of an amount equal to the value of the work which was to have been performed by an M/WBE pursuant to the Contractor's Schedule of M/WBE Participation, but which was not so performed, to ensure that sufficient Contract funds will be available if liquidated damages are assessed pursuant to paragraph 9 and/or
(2) suspend the Contractor's performance of this Contract in whole or in part.

B. The Awarding Authority shall give the Contractor prompt written notice of any action taken pursuant to paragraph A above and shall give the Contractor and any other interested party, including any M/WBEs, an opportunity to present evidence to the Awarding Authority that the Contractor is in compliance with the requirements of this Article, or that there is some justifiable reason for waiving the requirements of this Article in

whole, or in part. The Awarding Authority may invite SOMWBA and the Massachusetts Commission Against Discrimination to participate in any proceedings undertaken pursuant to this paragraph.

C. Upon a showing that the Contractor is in full compliance with the requirements of this Article, or that the Contractor has met or will meet the M/WBE participation goals for this Contract, the Awarding Authority shall release any funds withheld pursuant to clause A(1) above and lift any suspension of the Contractor's performance under clause A(2) above.

9. Liquidated Damages; Termination.

A. If payment by the Awarding Authority or performance by the Contractor is suspended by the Awarding Authority as provided in paragraph 8 above, the Awarding Authority shall have the following rights and remedies if the Contractor thereafter fails to take all action necessary to bring the Contractor into full compliance with the requirements of this Article, or if full compliance is no longer possible because the default of the Contractor is no longer susceptible to cure, if the Contractor fails to take such other action as may be required by the Awarding Authority to meet the M/WBE participation goals set forth in this Contract:

(1) the Awarding Authority may terminate this Contract, and/or

(2) the Awarding Authority may retain from final payment to the Contractor, as liquidated damages, an amount equal to the difference between (x) the total of the M/WBE participation goals set forth in this Contract, and (y) the amount of M/WBE participation credit earned by the Contractor for M/WBE Work performed under this Contract as determined by the Awarding Authority, the parties agreeing that the damages for failure to meet the M/WBE participation goals are difficult to determine and that the foregoing amount to be retained by the Awarding Authority represents the parties' best estimate of such damages. Any liquidated damages will be assessed separately for MBE and WBE participation.

B. Before exercising its rights and remedies hereunder, the Awarding Authority may, but the Awarding Authority shall not be obligated to, give the Contractor and any other interested party another opportunity to present evidence to the Awarding Authority that the Contractor is in compliance with the requirements of this Article or that there is some justifiable reason for waiving the requirements of this Article in whole or in part. The Awarding Authority may invite SOMWBA and the Massachusetts Commission Against Discrimination to participate in any proceedings undertaken hereunder.

10. Reporting Requirements.

The Contractor shall submit to the Awarding Authority al information or documentation that is necessary in the judgment of the Awarding Authority to ascertain whether the Contractor has complied with any of the provisions of this Article.

11. Awarding Authority's Right to Waive Provisions of this Article in Whole or in Part.

The Awarding Authority reserves the right to waive any provision or requirement of this Article if the Awarding Authority determines that such waiver is justified and in the public interest. No such waiver shall be effective unless in writing and signed by a representative of the Awarding Authority's Compliance Office or the office of its General Counsel. No other action or inaction by the Awarding Authority shall be construed as a waiver of ay provision of this Article.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATON AND RECREATION

SPECIAL GOOD FAITH REQUIREMENTS FOR PARTICIPATION BY VETERAN OWNED BUSINESS ENTERPRISES
(Implementing Executive Order No. 546, Establishing the Veteran Owned Business Enterprise Program).
BIDDER'S INSTRUCTIONS

THE APPARENT LOW BIDDER'S COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION IS A PREREQUISITE FOR RECEIVING THE AWARD OF THE CONTRACT.

1) Participation Goals and Program Operation

In order to be an eligible VOBE for the participation goals of this Contract, the business enterprise must be listed as a veteran-owned business within the VetBiz database, located at www.VetBiz.gov, at the time of the bid submission deadline. Only a VOBE identified as a veteran-owned small business via the VetBiz database shall count towards meeting the Program participation goal.

The Contractor must demonstrate that VOBEs are eligible for the following participation goals via its listing as a veteran-owned small business within the VetBiz database, located at www.VetBiz.gov, at the time said VOBE seeks to participate in business provided under this Contract; provided, that it shall also be the responsibility of the Awarding Authority to verify the status of the SDVOBE via said VetBiz database prior to the awarding of the Contract.

a) Design Services Contracts – In furtherance of the goals and objectives of the program, commencing July 1, 2013 until such time as the Secretary for Administration and Finance has adopted a new participation goal, the participation goal, which shall be expressed in the form of a benchmark for each design services contract, shall be three (3) percent; provided, that said participation goal may be met by the veteran-owned business enterprise performing as either a general or prime contractor, a subcontractor, or both; provided further, that the awarding agency shall verify the status of business enterprise participation on a design services contract.

b) Public Construction Contracts – In furtherance of the goals and objectives of the Program, commencing July 1, 2013 until such time as the Secretary of Administration and Finance has adopted a new participation goal, the participation goal, which shall be expressed in the form of a benchmark for each public construction contract, shall be three (3) percent; provided, that said participation goal may be met by the veteran-owned business enterprise performing as either a general or prime contractor, a subcontractor, or both; provided further, that the awarding agency shall verify the status of a service veteran-owned business enterprise prior to said business enterprise participation on a public construction contract.

2) Goal Reduction/Waiver

A) The Awarding Authority reserves the right to reduce or waive the SDVOBE participation goals established for this Contract upon written request made by a Bidder using the VOBE Waiver Request Form provided by the Awarding Authority.

B) If filed Sub-Bids are solicited for this Contract, requests from prospective general Bidders to reduce or waive the VOBE participation goals for this Contract should be received by the Awarding Authority no later than four (4) working days after the list of filed Sub- Bidders is mailed by the Awarding Authority to persons who have taken out plans for the Contract, using the VOBE Waiver Request Form provided by the Awarding Authority.

C) If there are no filed sub-Bids solicited for this Contract, requests to reduce or waive the SDVOBE participation goals for this Contract should be received by the Awarding Authority no later than five (5) working days before the date set for the receipt of general Bids. **THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY REQUEST TO REDUCE OR WAIVE THE VOBE PARTICIPATION GOALS FOR THIS CONTRACT THAT IS RECEIVED AFTER THESE DEADLINES.** Such written request must demonstrate to the satisfaction of the Awarding Authority that it is not feasible for a non- VOBE or non- VOBE general Bidder to meet the goals established for this Contract based upon any or all the following:

a) actual VOBE availability.

b) the geographic location of the project to the extent related to SDVOBE availability.

c) the scope of the work.

d) the percentage of work available for subcontracting to VOBEs; and/or

e) other relevant factors, including a **documented** inability by the prospective Bidder to obtain commitments from VOBE subcontractors sufficient to meet the VOBE goals after having made a diligent, good faith effort to do so. All the foregoing documentation shall accompany the completed Waiver Request Form. Such documentation shall include, at a minimum, the following:

- A list of all items of work under the Contract that the Bidder made available for subcontracting to VOBEs. The Bidder shall identify all items of work, other than work to be performed by filed sub-Bidders, that the Bidder did not make so available and shall state the reasons for not making such work available for subcontracting to VOBEs. The Bidder shall also demonstrate that, where commercially reasonable, subcontracts were divided into units capable of being performed by VOBEs.

- Evidence that the Bidder sent written notices soliciting Bids or proposals to perform the items of work made available by the Bidder for subcontracting to all available VOBEs qualified to perform such work. The Bidder shall identify each VOBE solicited, state the dates that notices were mailed, provide a copy of the written notice(s) sent, and provide a copy of any statement or response received from each VOBE solicited, including the reason for rejecting and VOBE who submitted a bid or proposal.

- Evidence that the Bidder made reasonable efforts to follow up on the written

notices sent to VOBEs with telephone calls or personal visits to determine with certainty whether the VOBEs were interested in performing the work. Phone logs or other documentation must be submitted.

- Evidence of efforts made to assist VOBE's that needed assistance in obtaining bonding or insurance, or lines of credit with suppliers if the inability of SDVOBE to obtain bonding, insurance, or lines of credit is the reason given for the Bidder's inability to meet the VOBE goals.

D) The Bidder may also submit any other information supporting its request for a waiver or reduction in the VOBE participation goals, including without limitation evidence that the Bidder placed advertisements in appropriate media and trade association publications announcing the Bidder's interest in obtaining bids or proposals from VOBEs, and/or sent written notification to VOBE economic development assistance agencies, trade groups and other organizations notifying them of the Contract and the work to be subcontracted by the Bidder to VOBEs. The Bidder shall also submit any other information reasonably requested by the Awarding Authority to show that the Bidder has taken all actions that could reasonably be expected to achieve the VOBE participation goals.

3) No later than five (5) working days after the opening of general Bids, the apparent low Bidder shall submit the following documents to the Awarding Authority's Contract Officer:

(i) a completed Schedule for Participation by VOBEs ("Schedule for Participation") in the form provided by the Awarding Authority showing VOBE participation in amounts equal to or exceeding the VOBE participation goals for this Contract; and

(ii) a completed Letter of Intent in the form provided by the Awarding Authority for each SDVOBE listed in the Schedule for Participation.

4) Each Letter of Intent shall identify and describe the work to be performed by the named VOBE (the "VOBE Work") with enough specificity to permit the Awarding Authority to identify the items of contract work that the VOBE will perform for VOBE participation credit. The Awarding Authority reserves the right to reject any Letter of Intent if the price to be paid for the VOBE Work does not bear a reasonable relationship to the value of such work under the Contract as determined by the Awarding Authority.

5) Within five (5) working days after receipt of the Schedule for VOBE Participation and Letters of Intent, the Awarding Authority shall review and either approve or disapprove the apparent low Bidder's submissions. If the apparent low Bidder has not submitted an appropriate Schedule for VOBE Participation and appropriate Letters of Intent establishing that the VOBE participation goal for the project will be met, the apparent low Bidder will be considered ineligible for Award of the Contract and the Awarding Authority will Award the Contract to the second lowest Bidder, subject to said Bidder's compliance with these conditions.

6) The Contractor is required to submit to the Awarding Authority signed subcontracts with all subcontractors prior to the commencement of work to be performed under these contracts, and/or a purchase order or invoice from each material supplier and/or manufacturer listed on the Schedule for VOBE Participation within thirty (30) days of the issuance of the Notice to Proceed by the Awarding Authority.

7) A filed Sub-Bidder is not required to submit a Schedule for VOBE Participation with its Bid. A filed Sub-Bidder may, at its option, submit a Letter of Intent with its Bid if it is a VOBE. If a filed sub-Bidder intends to sub-subcontract work to a VOBE, and the filed sub-Bidder wishes

that sub-subcontract to be credited toward the participation goals for this Contract, the filed sub-Bidder should submit a Letter of Intent from that VOBE with its Bid. A filed sub-Bidder can subcontract out up to 20% of its work to VOBEs, unless such work is designated as sub-subcontract Paragraph E work in the Bid Documents, in which case the 20% cap does not apply.

This is a:

D **Design Contract**
D **Construction contract**

The goal for this contract is Three (3 %) percent of the value of the contract unless waived in part or whole by DCR in writing.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATON AND RECREATION

SPECIAL GOOD FAITH REQUIREMENTS FOR PARTICIPATION BY VETERAN OWNED BUSINESS ENTERPRISES
(Implementing Executive Order No. 638, Promoting the Equitable Participation of Women and Underrepresented Groups in Construction

BIDDER'S INSTRUCTIONS

THE APPARENT LOW BIDDER'S COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION IS A PREREQUISITE FOR RECEIVING THE AWARD OF THE CONTRACT.

Pursuant to Executive Order No. 638: Promoting the Equitable Participation of Women and Underrepresented Groups in Construction ("EO No. 638"), bidders shall include in their bid submission a Plan of the how they plan to:

1. encourage the use of registered apprentices for the performance of the Work.
2. develop strong workforce equity practices.
3. partner with worker-serving organizations with a track record of reaching women and underrepresented groups; and
4. provide support services, including childcare, to facilitate the participation of women and underrepresented groups on the Work to be performed under the contract.

In addition, bidders are hereby notified that the contract shall include, and it shall be a requirement that any subcontract shall include, the following data collection and reporting obligations, at appropriate intervals, required by EO No. 638:

1. workforce needs, which may include the expected number of jobs, job hours, and job hours by occupation.
2. workforce demographics, consistent with but not limited to the requirements of M.G.L. c. 7C, §6 and M.G.L. c. 149, §44A, which may include race, gender, zip code, and other workforce characteristics.
3. benefits and supportive services provided to workers.
4. Hours worked by all employees, including women and people of color, by trade and position; and
5. Apprenticeship participation and pre-apprenticeship program completion statistics.

The Contractor shall submit to the Awarding Authority all information or documentation that is necessary in the judgment of the Awarding Authority to ascertain whether the Contractor has complied with any of the provisions of this Article.

APPENDIX C to the General Conditions of the Contract

INDEX OF THE COMMONLY USED FORMS

(Forms used during bidding are in Attachment B to the Instructions to Bidders)

Contractor's Weekly Workforce Report
Minorities/Women in Contractor's Weekly Workforce Report
Weekly Payroll Report Form and Statement of Compliance
Certification of Payment by Contractor to MBE/WBE and Instructions
Certificate of Completion by Minority/Women Business Enterprise
Certificate of Final Inspection, Release and Acceptance – E-2

CONTRACTOR'S WEEKLY WORKFORCE REPORT
THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION

DCR Project No._____Project Name _____ Project Location _____

Name of General Contractor_____Minority Goal %_____Women Goal %

Name of Contractor Filing Report_____Address _____

Week Ending_____Report No._____Date Work Began_____Date work completed _____

NOTE: **Min. = Minority** **Wom. = Women** ☐ Check here if this is a final report

Job Category	Number of Employees	Number of Employees Who Are		Total Weekly Workforce Hours	Total Weekly Workforce Hours		Weekly % Workforce Hours		Total Workforce Hours To Date	Total Workforce Hours to Date		% Of Workforce Hours to Date	
		Min.	Wom.		Min.	Wom.	Min.	Wom.		Min.	Wom.	Min.	Wom.
TOTALS:													

Mail with Weekly Payroll report to the assigned Project Manager at:

Department of Conservation & Recreation
Project Manager Name
10 Park Plaza
Boston, MA 02116

The undersigned hereby certifies under pains and penalties of perjury that the above information is true and accurate.

Authorized Signature_____Date_____

Print Name _____ Title_____

Telephone No._____FAX No._____

MINORITIES/WOMEN IN CONTRACTOR'S WEEKLY WORKFORCE REPORT
THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION

DCR Project No._____ Project Name _____

Name of General Contractor _____

Project Location _____

Name of Contractor Filing Report _____

Address _____

Week Ending _____ Report No. _____

JOB CATEGORY	NAME OF EMPLOYEE	MINORITY GROUP	GENDER

In contract Article XII, "Minority" refers to: Asian-Americans, Blacks, Western Hemisphere Hispanics, Native Americans, and Cape Verdeans

WEEKLY PAYROLL REPORT FORM
THE COMMONWEALTH OF MASSSCHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION

DCR Project No._____ Project Name_____

Project Location _____

Name of General Contractor_____

Name of Contractor Filing Report_____

Address_____

Week Ending_____ Date Work Began_____ Date work completed_____

Report No._____ ☐ Check here if this is a final report

Employee Name & Address	Work Classification	Hours Worked							(A) Total Hours	(B) Hourly Base Wage	Employer Contributions			(F) [B+C+D+E] Hourly Total Wage (prev.	(G) [A*F] Weekly Total Amount
		S	M	T	W	T	F	S			(C) Health & Welfare	(D) Pension	(E) Supp. unemployed		

NOTE: Every contractor and subcontractor are required to submit a copy of their weekly payroll records to DCR.
The undersigned states under the pains & penalties of perjury that the above provided and attached information is a true and accurate record of each person employed on the project and the hours worked and wages paid to each such employee, including payments to the referenced benefits. M.G.L. c. 149 §27B.

Authorized signature _____ Print Name_____

Print Title_____

Mail to: Department of Conservation and Recreation
Project Manager Name
10 Park Plaza
Suite 6620
Boston, MA 02116

WEEKLY PAYROLL RECORDS REPORT
& STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works construction project for which the enclosed rates have been provided. The ***Weekly Payroll Report Form*** includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the project.

In addition, every contractor and subcontractor are required to submit a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor, or public body shall furnish **to the Executive Office of Labor**, within fifteen days after completion of its portion of the work, a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

Date:_____/_____/_____

I,_____, _____
(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by

_____on the _____
(Contractor, subcontractor, or public body) (Building or 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 sections twenty-six and twenty-seven of chapter one hundred and forty-nine of the General Laws.

Signature _____

Title _____

CERTIFICATE OF PAYMENT

BY CONTRACTOR/DESIGNER TO MINORITY, WOMEN BUSINESS
& VETERAN OWNED BUSINESS ENTERPRISES

TO: Supplier Diversity Reports
Department of Conservation and
Recreation ,10 Park Plaza
Suite 6620,Boston,MA 02116

Reporting Period: Fiscal Year 20__

RE: Project:
Project Number:

Contract Start Date:

The undersigned hereby certifies under the pains and penalties of perjury that the vendor named below has made the following payments to the named Minority, Women Business and Veteran Owned Enterprises for work performed on the above project:

Firm Name of General Contractor:

Authorized Signature | Date

Print Name | Print Title

Phone Number | Email address

Work performed/payments made (use additional pages if needed):

	Firm Name	**Work Performed**	**Subcontract Amount**	**Payments This Quarter**	**FY Payments to date** (This fiscal year)	**Cumulative Payments** (Total payments over the life of the contract)
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$
☐ MBE ☐ WBE ☐ VOBE			$	$	$	$

* MBE, WBE and VOBE payment reports are required for each quarter of the fiscal year for each of your DCR projects. Reports are to cover the following three-month periods: 1st quarter, July 1st – September 30th; 2nd quarter, October 1st – December 31st; 3rd quarter, January 1st – March 31st; 4th quarter, April 1st – June 30th. Reports must be submitted within 10 business days of your receipt of this form.

NOTICE: *Intentionally submitting false information in this document may subject the contractor/ designer to criminal prosecution and/or debarment from public contracting.*

INSTRUCTIONS FOR COMPLETING CERTIFICATE OF PAYMENT

As part of its effort to ensure reliable, up-to-date information concerning the actual payments made to certified MBE, WBE and VOBE subcontractors on all DCR projects, we have prepared these instructions to assist you in completing the enclosed form. PLEASE READ THESE INSTRUCTIONS CAREFULLY. DCR WILL RETURN ANY CERTIFICATION OF PAYMENT THAT IS INCOMPLETE OR INACCURATE.

PLEASE NOTE: IF THIS PROJECT IS COMPLETE, ON HOLD, OR YOUR FIRM PREVIOUSLY SUBMITTED A **FINAL** CERTIFICATION OF M/WBE/VOBE PAYMENT FOR THIS PROJECT, PLEASE SO, INDICATE ON THE FORM AND RETURN IT TO: SUPPLIER DIVERSITY REPORTS, DEPARTMENT OF CONSERVATION AND RECREATION, 10 Park Plaza,Suite 6620
Boston, MA 02116

PLEASE INCLUDE THE FOLLOWING INFORMATION IN THE DESIGNATED SECTIONS OF THE FORM:

FIRM NAME: Include the M/WBE/VOBEs listed on the project's approved Schedule for Participation and any additional M/WBE/VOBEs that worked on the project. Be sure to check M/WBE/VOBE category for which they are certified. Note that any change in M/WBE/VOBEs participation used to meet the project goals must be pre-approved by the Project Manager or Engineer responsible for this project and a revised M/WBE/VOBE Schedule of Participation will be required. Contact the DCR Supplier Diversity coordinator immediately if you anticipate or have any changes in M/WBE/VOBE participation on this project.

WORK PERFORMED: Include a brief description of the work performed by each subcontractor listed. The description should match the M/WBE/VOBE Letter of Intent and approved Schedule of Participation. M/WBE/VOBEs must be certified in the category of work performed on this project for firms used to meet the project M/WBE/VOBE goals.

SUBCONTRACT AMOUNT: Include the contract or subcontract amounts listed on the M/WBE/VOBE Letters of Intent and approved Schedule of Participation. If the value of an MBE/WBE/VOBE contract or subcontract has
decreased or increased for any reason, you must contact the Project Manager or Engineer responsible for this project immediately. If additional M/WBE/VOBE firms not listed on the Schedule for Participation worked on this project list the amount of their subcontracts.

PAYMENTS THIS QUARTER: Include the amount you paid the M/WBE/VOBE subcontractor, either directly or indirectly, for work performed on this project during the three-month period covered by this Certification of Payment. If the amount paid was zero, please indicate that. Do not include payments from previous periods or estimated future payments in this column. Please note that you may be required to submit copies of cancelled checks to verify the amounts reported for firms used to meet the project's M/WBE/VOBE goals.

FY PAYMENTS TO DATE: Include the total amount you paid the M/WBE/VOBE subcontractor, either directly or indirectly, for work performed on this project for all quarters in **this fiscal year**. To ensure accurate reporting, please review the prior Certifications of Payments previously submitted for this project. Where necessary, correct any earlier mathematical or reporting errors and submit revised Certifications of Payment.

CUMULATIVE PAYMENTS: Include the total amount you paid the M/WBE/VOBE subcontractor, either directly or indirectly, for work performed over the entire life of this project (all quarters).

IF YOU HAVE ANY QUESTIONS, CONTACT DCR Supplier Diversity coordinator at 617.626.4925

CERTIFICATE OF COMPLETION

BY MINORITY/WOMEN BUSINESS/VETERAN OWNED BUSINESS ENTERPRISE
DEPARTMENT OF CONSERVATION AND RECREATION

TO: Supplier Diversity Reports
Department of Conservation and
Recreation 10 Park Plaza
Suite 6620, Boston, MA 02116

Reporting Period: Fiscal Year

RE: Project:
Project Number:
General Contractor:

Contract Start Date:

The undersigned hereby certifies under the pains and penalties of perjury that the vendor named below has received the payments to the named Minority, Women Business and Veteran Owned Enterprises for work performed on the above project:

Firm Name of Subcontractor:

Print Name | Print Title

Phone Number | Email address

DESCRIPTION OF WORK (AS SHOWN IN LETTER OF INTENT)

BRIEF DESCRIPTION OF ACTIVITY: (Note "Labor Only," "Material Only," "Material and Labor," "Complete")

_____

_____

_____

Original Subcontract Amount $ _____

Adjusted Subcontract Amount (Change Orders, etc.) $ _____

Total Payments Received to Date from Prime Contractor $ _____

Balance Due from Prime Contractor $ _____

If the completed activity is different from that listed on the Letter of Intent, please explain: _____

(If more space is needed, continue back of sheet)

The individuals signing below hereby certify under the pains and penalties of perjury that all work listed on the Contract Letter of Intent (or approved changes thereto as explained above) was completed by the MBE/WBE/VOBE firm on_____, 20_____and the above amounts listed for these services are true and accurate.

FOR CONTRACTOR

_____
Authorized Signature

_____
Print Name

FOR MBE/WBE/VOBE FIRM

_____
Authorized Signature

_____
Print Name

NOTE: To be submitted to the DCR Compliance Office within ten (10) days after completion of work by MBE/WBE/VOBE.

E-2 Final Acceptance
Certificate of Final Inspection, Release and Acceptance

Title: _____

Location: _____

Contractor: _____

This is to certify that a complete inspection of the above-referenced project was made on _____ by the undersigned, and that the entire work was completed in accordance with the plans and specifications. The undersigned recommends acceptance of the project.

_____ by: _____ Title: _____ Date:
_____ Designer Authorized
Signature

_____ _____
Resident Engineer Date Project Manager Date

_____
Project Engineer Date

CERTIFICATE OF RELEASE

1.) The undersigned hereby certifies that all work has been completed in accordance with the plans, specifications, and contract documents and that all change orders have been supported pursuant to Article VII of the General Conditions of the Contract.

2.) Contract Award Price: $ Adjusted Contract Price: $
Authorized Additions: $ Paid to Date:$
Authorized Deductions:$ Balance Due: $

3.) The undersigned further certifies that in addition to the amount set forth above, there are outstanding and unsettled the following change orders as submitted to the DCR.

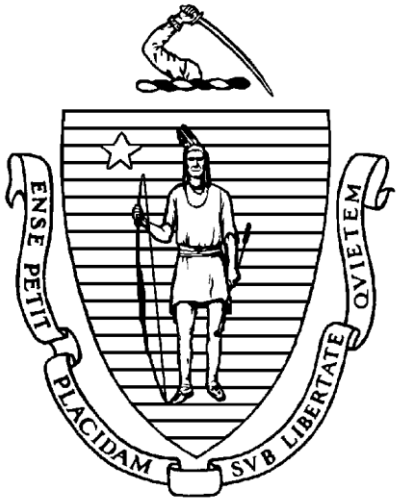
Request No.	Date:	Amount:
Request No.	Date:	Amount:
Request No.	Date:	Amount:

Subject to satisfactory disposition of change orders listed in Item 3 above, the undersigned releases the Commonwealth of Massachusetts from all further claims for wages or payments to subcontractors or suppliers except: (list on attached sheet).

_____ by: _____
Contractor Authorized Signature

The above-referenced project is accepted as of _____
Date

Deputy Commissioner, Engineering
Deputy Director
Project Manager Resident
Engineer
Office of Contract Administration
Contractor

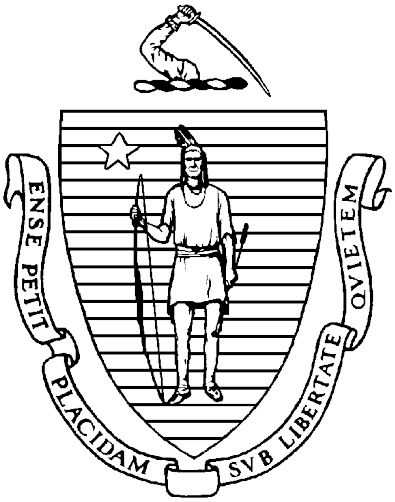


BID PACKAGE

PART IV

SPECIAL CONDITIONS OF THE CONTRACT

NO SPECIAL CONDITIONS



BID PACKAGE

PART V

TECHNICAL SPECIFICATIONS

Table of Contents

01000 CIVIL TECHNICAL SPECIFICATIONS 1
01010 SUMMARY OF WORK 3
01013 UTILITY INTERFERENCE 5
01020 CONTROL OF WORK AND MATERIALS 10
01030 SPECIAL PROVISIONS 15
01092 ABBREVIATIONS 18
01150 MEASUREMENT AND PAYMENT 20
01330 PROJECT SUBMITTALS 25
01356 STORMWATER PREVENTION 32
01505 MOBILIZATION & DEMOBILIZATION 35
01510 TEMPORARY UTILITIES 36
01545 PROTECTION OF PROPERTY 37
01562 DUST CONTROL 38
01567 ENVIRONMENTAL PROTECTION 40
01570 TRAFFIC CONTROL 43
01710 CLEANING UP 48
01720 CLOSEOUT 50
02000 CIVIL TECHNICAL SPECIFICATIONS 53
02200 EARTHWORK 54
02221 TRENCH EXCAVATION, EARTH AND BACKFILL 69
02513 BITUMINOUS ASPHALT PAVING 80
02523 BITUMINOUS CONCRETE SIDEWALK 85
02940 TREE PLANTINGS 86
03251 CONCRETE JOINT CONSTRUCTION 88
03300 CAST-IN-PLACE CONCRETE 92
STRUCTURAL TECHNICAL SPECIFICATIONS 105
016000 PRODUCT REQUIREMENTS 106
051200 STRUCTURAL STEEL FRAMING 113
051250 ARCHITECTURALLY EXPOSED STRUCTURAL STEEL 117
133123 TENSIONED FABRIC STRUCTURES 123

Civil

Technical Specifications

Section 01000

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This project includes the installation of multiple shade structures (4-post shade canopy, 2 cantilever shade shelters) as well as 8 trees to provide enhanced shade areas for the park's guests. The shade structures will require concrete pads and/or footings. An asphalt walkway will connect the proposed 4-post shade canopy to the existing concrete walkway. Two ADA-compliant picnic tables will be installed under the canopy. The two canvas cantilever shade shelters will be installed within an existing concrete pad to provide shade for an existing set of bleachers at the sports field. All mobilization and demobilization, and material and equipment staging is also included. This work is represented as the Base Bid for this project as shown on the Bid Form.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 WORK EXECUTION AND REQUIREMENTS

A. All labor, materials, tools, equipment, and incidentals required to complete the work shall be provided by the Contractor.

B. The Scope of work under this contract shall be as described herein and as shown on the attached drawings. The Contractor is responsible for furnishing all labor, materials, and equipment necessary to perform the work below and perform all work shown on the Contract Drawings:

1. Mobilize of equipment, materials, and personnel to the site. Staging area is located in the parking lot to the north of the site as identified on the project plans;

2. Transport all materials to and from the site in sufficient quantities and delivery timetable for expedited completion of the project;

3. Preserve and maintain all existing utilities and utility connections within the project area and immediately adjacent;

4. Preserve access to all roads, driveways, residences, maintain all areas in good condition, and make any repairs necessary immediately;

5. Preserve existing vegetation in areas outside the limits of work;

6. Install all shade shelter elements, including asphalt pads, concrete pads, and concrete footings at locations shown on the Drawings;

7. Install picnic tables in locations shown on the Drawings;

8. Install asphalt walkway to connect the proposed 4-post shade canopy to the existing asphalt walkway;

9. Plant the 8 trees in locations shown on the Drawings;

10. Miscellaneous associated work as indicated on the Drawings and these specifications;

11. Restoration of all other areas disturbed during construction; and

12. Demobilizing from the site.

C. Contractor shall submit a schedule of values for payment based on the estimated material quantities shown on the plans.

D. The Contractor is responsible for identifying and locating all underground and above ground utilities and service lines prior to any below or above ground site alterations. The Contractor is responsible for notifying concerned utilities, at least 72 hours prior to excavation in the proximity of telephone, gas and electric utilities, by calling Dig Safe at 1-888-344-7233 and all other utilities by calling the appropriate agency.

E. Contractor shall notify DCR at least 72 hours prior to any work on streets with water mains and/or sewer for mark-out of the existing system.

F. The Contractor is responsible for all earthwork including clearing and grubbing, excavation, grading, and backfilling as shown on the Contract Drawings and specified herein.

G. The Contractor is responsible for the off-site disposal of all material generated during clearing and grubbing activities, excavations and other construction activities as required. All materials shall be disposed of at an approved site. If offsite stockpiling is necessary due to insufficient staging area onsite, materials shall be stockpiled and transported to and from the site at no additional cost to the Owner.

H. Any ledge encountered during excavation that will interfere with the placement of specified devices or obtaining finished grades as specified on the Contract Drawings will be brought to the attention of the Engineer. Any rock excavation will be performed in accordance with Section 02200 EARTHWORK.

SECTION 01010

SUMMARY OF WORK

I. Connection of all drainage structures and piping shall be watertight and shall be done in accordance with the manufacturer's specifications, and the specifications and Drawings contained herein.

J. The Contractor shall provide and maintain erosion control measures as shown on the Contract Drawings and as specified herein at all locations prior to and during all construction activities.

K. The Contractor is responsible for dewatering the project areas during construction activities and shall furnish all necessary equipment including temporary cofferdams, pumps, piping, and sedimentation controls to conduct dewatering activities.

L. The Contractor is responsible for returning the construction area and surrounding area to its pre-construction condition.

M. The Contractor shall note that this project is subject to conditions specified under the Massachusetts Department of Environmental Protection, Wetlands Order of Conditions. This project is subject to all applicable State regulations, and great care shall be taken to minimize discharges and impacts to regulated areas.

N. The Contractor is to perform the work of this contract in accordance with applicable State and Federal laws and regulations. In the event the Owner is required to pay any fines, administrative penalties or damages to anyone, including governmental agencies, due to the Contractor's failure to perform in accordance with this contract and/or regulations, the Contractor will indemnify and hold harmless the Owner and reimburse Owner for all such payments plus reasonable legal fees and expenses.

O. The site shall be stabilized upon completion in a manner satisfactory to the Engineer.

END OF SECTION

SECTION 01013

UTILITY INTERFERENCE WITH PROPOSED WORK

PART 1 - GENERAL

1.01 LOCATION OF UNDERGROUND FACILITIES

A. Facilities and other underground locations shown on the Drawings are from the best sources available to the Owner at the time of this Contract preparation and are furnished only for information and convenience of the Contractor and are not guaranteed.

B. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface locations of existing pipes, structures or other underground phenomena actually encountered during construction shall be the same as those shown on the Drawings.

B. It is further agreed and understood that the Contractor shall not use or be entitled to use any of the information made available to him on the plans or obtained in any examination made by him as a basis of any claim or demand against the Owner or the Engineer, because of any variance between the information made available and the subsurface locations of natural phenomena, existing pipes or other structures as actually encountered during the construction work, except as may otherwise be provided for this Section.

C. In general, main line facilities only are shown and not individual connections from main line to buildings.

D. The presence of a structure along a proposed pipeline generally indicates that there will be a corresponding connection to it from whatever main line facilities are in the street.

E. The Contractor shall take all necessary steps, including field inspections and consultations with the Utility Owner and Property Owners, to insure that the most up to date information and accurate information available is used to mark the field location of the facilities, including service connections, prior to construction.

1.02 RELATED WORK

Documents affecting work of this Section include, but are not necessarily limited to, General Specifications, Special Conditions, and these Specifications.

1.03 PIPE LOCATIONS

A. Pipe lines and structures installed under this Contract will be located substantially as indicated on the Drawings. The Engineer reserves the right to make such modifications in location and grade as may be found desirable to avoid interference with existing structures and/or facilities or to avoid unsatisfactory locations, all as he may see fit as in the best interests of the Owner.

B. No additional compensation shall be due for adjustments within applicable pipe depth categories.

C. Contract unit prices shall apply.

1.04 PROTECTION OF UNDERGROUND FACILITIES AND DAMAGES THERETO

A. The Contractor shall notify "Dig Safe" of his operations at least 72 hours prior to construction on any portion of the project.

B. The Contractor shall notify all utility companies of his operations sufficiently in advance of construction and take all measures necessary to avoid damage or undue interruption to the utilities' normal services.

C. Utility poles shall be braced by the Contractor as directed by the utilities' owner and all costs shall be included in the contract unit prices.

D. No additional compensation shall be allowed because of damage to facilities due to test pit excavation.

1.05 CONDITION OF EXISTING FACILITIES

A. In general, poor physical condition of existing facilities shall not be an acceptable basis for claiming additional compensation.

B. Further, protection or repair of existing facilities outside of the Trench Width shall not be considered as a valid basis for additional compensation.

C. The Contractor shall take all prudent steps to be aware of the physical condition of the existing facilities expected to be encountered, and to adjust his operations accordingly.

PART 2 – PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 INTERFERENCE AND RELOCATION OF FACILITIES

Interference shall be considered to exist when the facility intrudes within the Trench Width for various depths to invert, as tabulated on the Drawings.

3.02 INTERFERENCE COSTS AND CLAIMS

A. Claims for the costs of protecting, repairing and/or replacing facilities which interfere will only be considered when the Engineer determines that:

1. The facility is not shown on the Drawings.

2. The facility is shown but the facility is found in a location substantially different from the location shown.

3. The Contractor has necessarily incurred additional cost because of the interference.

4. In general, claims will not be considered for cross trench service connections which are not shown on the Drawings or incorrectly shown.

B. It is routine and customary in work of this kind to encounter subsurface or other conditions which require changes in pipe line grade, alignment and/or relocation of facilities or other adjustments which may necessitate rescheduling of the Contractor's work.

1. The Contractor should allow contingency in his bid for schedule adjustments commonly encountered.

2. The Engineer shall in general not approve claims for delay because of changes in alignment or rescheduling of construction.

C. Where facilities are shown on the Drawings to interfere, the Contractor is required to maintain facilities in operation in their existing locations.

1. Such interference's and the protection and repair of such facilities shall not constitute the basis of an approvable claim.

2. The cost to maintain such facilities in operation in their existing location shall be included by the Contractor in his bid.

3.03 RELOCATION OF FACILITIES

A. Relocation of facilities is required:

1. Where indicated on the Drawings.

2. When a 1-foot or more vertical and horizontal separation cannot be achieved between the existing facility and the new pipe line.

3. To comply with minimum of 10-ft water/sewer separation.

4. Relocation may be avoided in certain cases by line and grade adjustments.

B. Existing facilities shall not be disturbed until the facility owner and the Engineer agree to the arrangements and the Engineer requests the relocation to proceed in writing.

1. If the owners of the facilities permit, and the Engineer so requests, the Contractor shall do the whole or any portion of the relocation work.

2. Relocation of facilities will generally be by new pipe and appurtenances, approved and furnished by the facility owner, except where it is feasible in the opinion of the Engineer and facility owner to utilize existing materials.

3. If so requested by the facility owner, the Engineer may direct the Contractor to furnish the material.

4. All removed materials remain the property of the facility owner.

3.04 RELOCATION COSTS AND CLAIMS

A. All costs of temporary relocations for the Contractors convenience shall be borne by the Contractor.

B. Relocation costs for all facilities specified on the Drawings to be relocated shall be the responsibility of the Contractor and be included in the Contractor's bid prices including those specifically for facility relocations, if such are included.

C. Relocation costs for publicly owned facilities, not specified on the Drawings to be relocated but directed to be relocated by the Engineer in writing shall be paid in accordance with the Supplemental Conditions.

D. Relocation costs for privately owned utilities for which relocation is required by the work of this Contract, will not be approved by the Engineer for payment as Extra Work.

E. Exceptions as determined by the Engineer shall be paid in accordance with Supplemental Conditions.

3.05 PRIVATE FACILITY COMPANY CLAIM DISTINCTIONS

A. Claims against the Owner by the Contractor for the cost of delays or damage repair sustained by the Contractor because of damage to or interference’s between privately owned public facilities and the proposed work will not be considered valid for additional compensation.

1. Claims involving privately owned facilities must be settled between the Contractor and the facility owner.

B. The Owner reserves the right to exercise, or not to exercise any rights he may have to require relocation of privately owned public facilities at the facility company's expense in case of interference’s.

1. If the Owner does not exercise such rights, no claims against the Owner for not exercising such rights shall be approved by the Engineer.

3.06 FACILITY SERVICE CONNECTIONS AND WORK

A. The Contractor shall make all arrangements with the facility companies for temporary and permanent services and relocations required under this Contract, subject to the conditions described elsewhere in these Specifications.

1. Facility companies in the area of work and/or expected to provide service to the work shall be arranged for and if required paid for at no additional expense to the Owner.

END OF SECTION

SECTION 01020

CONTROL OF WORK AND MATERIALS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Work of this Section includes control of work and materials during the Project.

1.02 HAULING, HANDLING AND STORAGE OF MATERIALS

A. The Contractor shall, at his own expense, handle and haul all materials furnished by him. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by him that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

1.03 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 means for completely covering all open excavations and for accommodating travel when work is not in progress. The length of open trench will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.

B. Where prescribed by the Engineer, excavations shall be completely closed at the end of each workday. Backfilling or use of steel plates of adequate strength to carry traffic shall be used.

C. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, then special construction procedures shall be taken, such as prohibiting stockpiling excavated material in the roadway.

1.04 REJECTED MATERIALS AND DEFECTIVE WORK

A. Materials furnished by the Contractor and rejected by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.

B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and

made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.

C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Engineer, occurring previous to the final payment.

1.05 SANITARY REGULATIONS

A. Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers, in such manner, and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committance of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

1.06 SAFETY AND HEALTH REGULATIONS

A. This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to regulations of the Massachusetts Division of Occupational Safety. Contractors shall be familiar with the requirements of these regulations.

1.07 MAINTENANCE OF DRAINAGE FACILITIES

A. All existing drainage facilities including, but not limited to; brooks, streams, rivers, canals, channels, ditches, culverts, catch basins and drainage piping shall be adequately safeguarded so as not to impede drainage or to cause siltation of downstream areas in any manner whatsoever. If the Contractor damages or impairs through circumstances beyond his control, any of the aforesaid drainage facilities, he shall repair the same within the same day.

1.08 SITE INVESTIGATION

A. The Contractor acknowledges that he has satisfied himself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the Drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint himself with available information will not relieve him from the responsibility for estimating properly

the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

1.09 CUTTING, FITTING AND PATCHING

A. The Contractor shall do all cutting, fitting, or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other Contractors, as shown upon or reasonably implied by the Drawings and the specifications for the completed structure, including all existing work.

B. The Contractor shall not endanger any work by cutting, digging, or otherwise, and shall not cut or alter the work of any other Contractor, save with the consent of the Engineer.

C. All holes or openings required to be made in new or existing work, particularly at pipe, conduit, or other penetrations not covered by escutcheons or plates, shall be neatly patched. All such holes shall be made completely watertight as approved by the Engineer.

D. Workmanship and materials of patching and repair work shall match the adjacent similar work, and shall conform to the applicable sections of the specification. Patches and joints with existing work shall provide, as applicable in each case, visual, structural, and waterproofing continuity.

1.10 WEATHER PROTECTION

A. The Contractor shall only clear, excavate, and/or temporarily destabilize areas that may be quickly repaired and/or completed within three (3) days or less in the event of adverse weather, such as heavy rains, winds, or other storms that could potentially affect the project area or raise river water levels such that continued work or immediate repair is otherwise impractical.

B. The Contractor shall install weather protection and shall furnish adequate heat in the area so protected during cold weather.

1.11 ELECTRICAL SERVICES

A. The Contractor shall make all necessary applications and arrangements and pay for all fees and charges for electrical energy for power and light necessary for the proper completion of this contract during its entire progress. The Contractor shall provide and pay for all temporary wiring, switches, connections, and meters.

B. There shall be sufficient electric lighting so that all work may be done in a workmanlike manner where there is not sufficient daylight.

1.12 ACCEPTANCE OF THE WORK

A. Until the final acceptance of the Work, it shall be under the care and charge of the Contractor and every precaution shall be taken necessary against injury or damage to the Work by the action of the elements or any other causes. The Contractor shall rebuild, repair, restore and make good, at their own expense, all injuries or damages to any portion of the Work before its completion and acceptance.

1.13 REGULATORY COMPLIANCE

A. The Contractor shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the Work as drawn and specified. If the contractor performs any Work contrary to such laws, ordinances, rules and regulations, the Contractor shall bear all cost arising therefrom.

B. The Contractor shall secure and pay for all necessary permits for this Work.

1.14 PERMANENT FEATURES PROTECTION

A. The Contractor shall maintain and protect existing pipes, pavement, ramps, wires, fences, and other structures which, in the opinion of the Engineer, must be preserved in place without being temporarily or permanently relocated. In case of damage, the Contractor shall notify the Engineer so that the proper steps may be taken to repair any and all damage done. When the Engineer does not wish to make the repairs itself, all damage shall be repaired by the Contractor; or, if not promptly done by him, the Engineer may have the repairs made at the expense of the Contractor.

B. During execution of any and all items of the Work, extreme care shall be exercised by the Contractor to preclude any interferences/disturbances of existing structures, roadways, walkways, above-grade and below-grade utilities, or other features not associated with the Work. These interferences/disturbances shall include but not be limited to damage, movement, or collapse of the structures, roadways, walkways, and utilities. The Contractor shall assume the liability for any and all said damage, movement, settlement or collapse and promptly repair same at no cost to the Owner.

1.15 WORK SCHEDULE

A. Work may be performed at the site on Mondays through Fridays between 7:00 am and 5:00 pm unless otherwise directed by the Owner/Engineer. Construction equipment shall be operated in accordance with local ordinances.

B. Work may be permitted on weekends and legal holidays if the Contractor obtains written approval from the Engineer. The request shall be made 72 hours in advance of the work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01030

SPECIAL PROVISIONS

PART 1 - GENERAL

1.01 WATER FOR CONSTRUCTION PURPOSES

A. In locations where water is in sufficient supply, the contractor may be allowed to use water without charge for puddling or jetting backfill and other construction purposes. The express approval of the Owner shall be obtained before water is used. Waste of water by the Contractor shall be sufficient cause for withdrawing the privilege of unrestricted use.

B. Water shall be provided by approved distribution system, hydrant or approved surface supply. Under no circumstances shall water be pumped directly from a reservoir.

C. If no water is available, the Contractor shall supply water at no additional cost to the Owner.

1.02 DIMENSIONS OF EXISTING STRUCTURES

Where the dimensions and locations of existing structures are of critical importance in the installation or connections of new work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment, which is dependent on the correctness of such information.

1.03 EXISTING UTILITY LOCATIONS – CONTRACTOR'S RESPONSIBILITY

The Contractor is responsible for identifying and locating all underground and above ground utilities and service lines prior to any below or above ground site alterations. The Contractor is responsible for notifying concerned utilities, at least 72 hours prior to excavation in the proximity of telephone, gas and electric utilities, by calling Dig Safe at 1-888-344-7233.

1.04 OCCUPYING PRIVATE PROPERTY

The Contractor shall not enter upon nor occupy with men, equipment or materials any property outside of the public highways or DCR property / easements, except after the consent of the owners or their agents.

1.05 SIGNS

A. Any required signs, including DEP file numbers, if necessary, shall be installed as directed by the Engineer. Signs shall be erected within ten (10) days after the construction contract is awarded. Signs shall be fabricated, erected, and maintained by the Contractor.

B. The Contractor shall provide adequate support signs as determined by the Engineer. All supports, trim, and back of sign shall be painted with at least two coats of exterior paint.

C. Signs shall be maintained by the Contractor in good condition at all times for the duration of construction. The Contractor shall remove signs upon completion of construction.

D. Contractor shall provide detour signs at the nearest intersection to divert traffic along other roads. It may be necessary to use multiple signs for each detour.

1.06 COORDINATION

A. Coordination of Work

The General Contractor shall be responsible for coordinating his own work as well as that of any subcontractors. He shall be responsible for the notification to the Engineer when each phase of work is expected to begin and approximate completion date.

B. Coordination with Utilities

1. The Contractor shall, at least 72 hours prior to excavation in the proximity of telephone, gas and electric utilities, notify the utilities concerned by calling Dig Safe at 1-888-344-7233.

2. The Contractor shall notify DCR at least 72 hours prior to excavation in streets with water mains and/or sewer for mark-out of the existing system.

3. The Contractor shall coordinate all work involving utilities and shall satisfy himself as to the existing conditions of the areas in which he is to perform his work. He shall conduct and arrange his work so as not to impede or interfere with the work of other Contractors working in the same or adjacent areas. The Contractor shall also be responsible for coordinating any and all work performed by his Subcontractors.

1.07 TIME FOR COMPLETION OF CONTRACT

A. The time for completion of this contract is stipulated in the Form of General Bid. The Bidder shall base his bid on completing the proposed work by the completion date stipulated in the Form of General Bid.

SECTION 01030

SPECIAL PROVISIONS

1.08 MAINTENANCE OF EXCAVATED SURFACES

After backfilling and compacting excavations, the Contractor shall be responsible for keeping the ground surface clean and passable at all times until the surface has been restored to original conditions.

1.09 PROTECTION OF AQUIFER & WATER COURSES

A. The Contractor shall take extra precautions to ensure that no pollutants enter surface waters of the Commonwealth or the groundwater table within the construction area. The Contractor shall not store hazardous fuels or other potential contaminants on the construction site and shall take immediate action if any spills occur. This shall include removal of any contaminated soil and replacement with clean fill. In the event of a spill, the Engineer shall be notified immediately.

B. Refueling of construction equipment and washing of equipment shall not be performed on the site without permission from the Engineer.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01092

ABBREVIATIONS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Listing of Abbreviations: The listing of abbreviations in this Specification Section represent the Standard Organization named.

B. Related Work
1. Documents affecting work of this section include, but are not necessarily limited to, General Specifications, Special Conditions, and these Specifications.
2. All related Specification Sections shall be used in conjunction with this Section.

1.02 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the Standard, except when more stringent requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids.

1.03 LISTING OF STANDARD ORGANIZATIONS AND THEIR ABBREVIATIONS

AA	Aluminum Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGCA	Associated General Contractors of America
AHDGA	American Hot Dip Galvanizers Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Constructors
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association

SECTION 01092

ABBREVIATIONS

BIA	Brick Institute of America
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
DEP	Massachusetts Department of Environmental Protection
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
EJCDC	Engineers Joint Contract Documents Committee
EPA	Environmental Protection Agency
FM	Factory Mutual
Fed. Spec.	Federal Specification
HI	Hydraulic Institute
IEEE	Institute of Electrical and Electronics Engineers
ISA	Instrument Society of America
ISO	International Standards Organization
MIA	Masonry Institute of America
MIL.	Military Specification
MSS	Manufacturers Standardization Society of the Valve and Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSPC	National Standard Plumbing Code
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PPI	Plastic Pipe Institute
PS	Product Standards of the National Bureau of Standards
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPI	Society of the Plastics Industry
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
TPI	Truss Plate Institute
UL	Underwriters Laboratories

END OF SECTION

SECTION 01330

PROJECT SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY:

A. For the purpose of this project the ENGINEER or CONSULTANT shall be Comprehensive Environmental, Inc., 21 Depot Street, Merrimack, NH 03054.

B. This Section includes administrative and procedural requirements for submittal of Shop Drawings, Product Data, Samples, the Submittal Schedule, and other miscellaneous administrative and quality control submittals.

C. Submittal Schedule: The Submittal Schedule shall document the Contractor's planning for the timely execution of the Work, in accordance with the Construction Contract and submittal requirements set forth in this Section.

D. Preconstruction Documentation includes but is not limited to videos, photos, or any other documentation herein.

E. Shop Drawings include, but are not limited to, the following (Note: standard information prepared without specific reference to the Project is not Shop Drawings):

1. Fabrication drawings
2. Installation drawings
3. Setting diagrams
4. Shopwork manufacturing instructions
5. Templates and patterns
6. Schedules

F. Product Data include, but are not limited to, the following:

1. Manufacturer's product data
2. Manufacturer's installation instructions
3. Standard color charts
4. Catalogue cuts
5. Roughing-in diagrams and templates
6. Standard wiring diagrams
7. Printed performance curves
8. Operational range diagrams
9. Mill reports
10. Standard product operating and maintenance manuals

G. Quality control submittals include, but are not limited to, the following:

1. Design data
2. Certifications
3. Manufacturer's instructions

4. Manufacturer's field reports

H. Administrative submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits
2. Applications for Payment
3. Performance and payment bonds
4. Insurance certificates
5. Listing of subcontractors

1.02 DEFINITIONS:

A. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.

1.03 SUBMITTAL SCHEDULE:

A. Prepare a complete schedule of submittals. Submit the schedule at the Pre-Construction meeting for Engineer's and Consultant's review.

1. Coordinate Submittal Schedule with the list of subcontractors, Schedule of Values, and the list of material suppliers, as the well as the Contractor's Construction Schedule.
2. Incorporate submittal schedule in Contractor's Construction Schedule.

B. Prepare the schedule in chronological order. Provide the following information:

1. Schedule date for the first submittal
2. Related Section number
3. Submittal category (Shop Drawings, Product Data, etc.)
4. Name of the subcontractor
5. Description of the part of the Work covered
6. Scheduled date for resubmittal
7. Scheduled date for the Consultant's final release or approval

C. Distribution: Following the Consultant's response to the initial submittal schedule, print and distribute copies to the Consultant, Engineer, subcontractors, and other parties required to comply with submittal dates indicated. When revisions are made, distribute to the same parties. Delete parties from distribution when they have completed their assigned part of the Work and are no longer involved in construction activities.

D. Schedule Updating: Revise the schedule after each meeting or other activity where revisions have been recognized or made. Issue the updated schedule prior to the next regular project meeting.

1.04 SUBMITTAL PROCEDURES:

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal to the Consultant sufficiently in advance of schedule performance of related construction activities to avoid delay.

1. Coordinate each submittal with other submittals and related activities that require sequential activity including:

a) Testing
b) Purchasing
c) Fabrication
d) Delivery
e) Other submittals and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for the same element of the Work and different elements of related parts of the Work to avoid delay in processing because of the Consultant's need to review submittals concurrently for coordination.

a) The Consultant reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for Contractor's review prior to submittal to the Consultant, and for Consultant's review of submittal, including time for re-submittals.

a) Allow ten (10) working days for the Consultant's or Engineer's initial review of each submittal, plus five (5) working days if a Sub-Consultant/Engineer's review is required. Allow additional time if the Consultant must delay processing to permit coordination with subsequent submittals. The Consultant will advise the Contractor when a submittal being processed must be delayed for coordination.
b) Where necessary to provide an intermediate submittal, process the intermediate submittal in the same manner as the initial submittal.
c) Allow five (5) additional working days for reprocessing each submittal.
d) No extension of contract time will be authorized because of the Contractor's failure to transmit submittals to the Consultant sufficiently in advance of the Work to permit processing.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification:

1. Indicate name of the firm or entity that prepared each submittal on the label or title block.
2. Provide a space approximately 4 by 5 inches (100 x 125 mm) on the label or beside the title block to record the Contractor's review and approval markings and the action taken by the Consultant.
3. Include the following information on the label for processing and recording action taken:

a) Project name
b) Date
c) Name and address of the Consultant
d) Name and address of the Contractor
e) Name and address of the subcontractor
f) Name and address of the supplier
g) Name of the manufacturer
h) Number and title of appropriate Specification Section
i) Drawing number and detail references, as appropriate
j) Similar definitive information as necessary

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Consultant and to other destinations by use of a transmittal form. The Consultant will return submittals received from sources other than the Contractor.

1. Record relevant information and requests for data on the transmittal form. On the form, or an attached separate sheet, record deviations from the requirements of the Contract Documents, including minor variations and limitations.
2. Include the Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

D. Placement of Orders for Materials & Components: Do not place orders for materials or components before receipt of reviewed and accepted submittal for same from Consultant.

1.05 SHOP DRAWINGS:

A. Submit newly prepared information, drawn accurately to scale. Do not reproduce Contract Documents or copy standard printed information as the basis of Shop Drawings.

1. Include the following information on Shop Drawings:

a) Identification of products and materials included
b) Compliance with specified standards
c) Notation of coordination requirements

d) Notation of dimensions established by field measurement taken by the Contractor
e) Correlation of Shop Drawings to Contract Documents by reference to sheet number, details, schedule or room number.

2. Specifically note and bring to the Consultant's attention any deviations from the Contract Documents on the Shop Drawings.
3. Do not allow Shop Drawing copies that do not contain an appropriate final stamp or other marking indicating the action taken by the Consultant to be used in construction. The Contractor shall replace improvements installed by the Contractor prior to obtaining approval by the submittal process, if Engineer so requests, at no additional cost to the Engineer.
4. Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (750 by 1050 mm).
5. Initial Submittal: Submit up to 5 black-line prints or bond copies for the Consultant's review. The Consultant will return one marked up copy after review. If the Contractor desires more than one copy back, submit additional copies at initial submittal.
6. Final Submittal: Submit up to 5 black-line prints or bond copies for the Consultant's review. If approved, one copy will be returned to the contractor.

1.06 PRODUCT DATA:

A. Collect Product Data into a single submittal for each element of construction or system. Mark each copy to show which choices and options are applicable to the project.

1. Where Product Data includes information on several similar products, some of which are not required for use on the Project, mark copies clearly to indicate which products are applicable.
2. Where Product Data must be specially prepared for required products, materials, or systems because standard printed data are not suitable for use, submit as Shop Drawings, not Product Data.

3. Include the following information in Product Data:

a) Manufacturer's printed recommendations
b) Compliance with recognized trade association standards
c) Compliance with recognized testing agency standards
d) Application of testing agency labels and seals
e) Notation of dimensions verified by field measurement
f) Notation of coordination requirements

4. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed. Include a signed certificate of compliance with each Product Data submittal.

B. Submittals: Submit up to 5 copies of each required Product Data submittal. One copy will be returned to the Contractor. If the Contractor desires more than one copy back, submit additional copies. Unless the Consultant or Engineer observes noncompliance with provisions of the Contract Documents, the submittal may serve as the final submittal.

C. Distribution: Furnish copies of final Product Data submittal to the manufacturers, subcontractors, suppliers, fabricators, installers, governing authorities and others as required for performance of the construction activities. Show distribution on transmittal forms.

1. Do not proceed with installation of materials, products, and systems until a copy of reviewed and accepted Product Data applicable to the installation is in the Installer's possession.
2. Do not permit use of unmarked copies of Product Data in connection with construction.

1.07 QUALITY ASSURANCE SUBMITTALS:

A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.

B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with the specified requirements.

1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control."

1.08 CONSULTANT'S ACTION:

A. Except for submittals for the record or for information, where action and return of submittals is required, the Consultant or their respective sub-consultant will review each submittal, mark to indicate the action taken, and return to the Contractor within ten (10) working days of receipt of the submittal.

1. Compliance with specified characteristics is the Contractor's responsibility and not considered part of the Consultant's review and indication of action taken.
2. If the submittal involves either changes to the drawings and/or project manual or contains information not reviewed and approved as part of the project drawings

and/or project manual by the Engineer, the Engineer shall also review and approve the submittal. An additional five (5) working days shall be required for the Engineer's review.

B. Action Stamp: The Consultant will stamp each submittal with a uniform action stamp. The Consultant will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: Where submittals are marked "No Exceptions Taken," or similar language having the same intent, the Work covered by the submittal may proceed, provided it complies with the requirements of the Contract Documents. Final acceptance will depend on that compliance.
2. Final-but-Restricted Release: Where submittals are marked "Make Corrections Noted," or similar language having the same intent, the Work covered by the submittal may proceed provided it complies with both the Consultant's notations and corrections on the submittal and requirements of the Contract Documents. Final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked "Revise and Resubmit," or similar language having the same intent, do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the Consultant's notations. Resubmit without delay. Repeat if necessary to obtain an action mark that will allow the Work to proceed.

    a) Do not permit submittals marked "Revise and Resubmit" or "Rejected," or similar language having the same intent, to be used at the project site or elsewhere where construction is in progress.

4. Other Actions: Where a submittal is primarily for informational or record purposes or for special processing or other activity, the submittal will be returned, marked "Action not Required," or "Not Reviewed," or similar language having the same intent.

PART 2 - PRODUCTS:

Not Used

PART 3 - EXECUTION:

Not Used

END OF SECTION

SECTION 01356

STORMWATER POLLUTION PREVENTION MEASURES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01567 Environmental Protection, and the requirements of federal, state, and local laws.

1.02 EROSION AND SEDIMENT CONTROLS

A. Discharge of trench, pit or pipe installation dewatering water shall be to a temporary sedimentation collection/filtration structure, adequately protected drainage structure or other method/device as approved by the Engineer. Existing drainage structures shall be protected from water containing any sediment(s) by methods approved by the Engineer.

B. The stabilization practices to be implemented shall include sod stabilization, protection of trees, preservation of mature vegetation. On his daily report, the Contractor shall record the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated.

C. Stabilization practices shall be initiated prior to construction and maintained until permanent protection is established.

D. Any disturbed area subject to erosion control measures shall be in accordance with Specification Section 02276 EROSION CONTROL.

E. Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented prior to any land disturbance to minimize erosion and sediment runoff. Structural practices shall include the following devices.

F. The Contractor shall provide Filtrexx SiltSoxx™ or approved equal as a temporary structural practice to minimize erosion and sediment runoff. Filtrexx SiltSoxx™ shall be properly place to effectively retain sediment prior to any land disturbance. Filtrexx SiltSoxx™ shall be removed/replaced as needed for work to progress in the drainage area. Areas where Filtrexx SiltSoxx™ are to be used are shown on the drawings. Final removal of Filtrexx SiltSoxx™ barriers shall be upon approval by the Engineer. Rows of Filtrexx SiltSoxx™ shall be provided as follows:

1. Along the downhill perimeter edge of all areas disturbed.
2. Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.

3. Along the toe of all cut slopes and fill slopes of the construction areas.
4. Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverses disturbed areas or carry runoff from disturbed areas.
5. Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced a maximum of 4 feet apart.
6. At the entrance to the culverts that receive runoff from disturbed areas.

PART 2 – PRODUCTS

2.01 PERMEABLE COMPOST FILTER SOCK (FILTREXX SILTSOXX™)
Permeable compost filter socks shall be as specified in Specification Section 02276 EROSION CONTROL.

2.02 SILT FENCES
Silt fences shall be as specified in Specification Section 02276 EROSION CONTROL.

2.03 STRAW BALES
Straw bales shall be as specified in Specification Section 02276 EROSION CONTROL.

PART 3 – EXECUTION

3.01 INSTALLATION OF PERMEABLE COMPOST FILTER SOCK
Installation of permeable compost filter socks shall be as specified in Specification Section 02276 EROSION CONTROL.

3.02 INSTALLATION OF SILT FENCES
Installation of silt fences shall be as specified in Specification Section 02276 EROSION CONTROL.

3.03 INSTALLATION OF STRAW BALES
Installation of straw bales shall be as specified in Specification Section 02276 EROSION CONTROL.

3.04 MAINTENANCE

A. The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures.

B. Silt fences shall be inspected as specified herein. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or

become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade.

C. Straw bale barriers shall be inspected as specified herein. Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-half of the height of the barrier. Bale rows used to retain sediment shall be turned uphill at each end of each row. When a straw bale barrier is no longer required, it shall be removed. The immediate are occupied by the bales and any sediment deposits shall be shaped to an acceptable grade.

3.05 INSPECTIONS

A. The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.

B. Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Where applicable, erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

C. For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan (where applicable), maintenance performed, and actions taken. The report shall be furnished to the Engineer within 24 hours of the inspection as a part of the Contractor’s daily report. A copy of the inspection report shall be maintained on the job site.

END OF SECTION

SECTION 01505

MOBILIZATION / STAGING / DEMOBILIZATION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals to transport and store all equipment, labor and materials to and from the construction site as necessary.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 STORAGE AREA

A. It shall be the Contractor's sole responsibility to procure and maintain a suitable storage area for tools, materials and equipment necessary to perform the work.

1. Prior to mobilization, the Contractor shall submit a proposed location(s) for staging of materials to the Owner and Engineer. Staging and stockpiling areas shall be approved by the Owner and Engineer prior to mobilization. The Owner does not guarantee a staging area of any size whatsoever.

2. The storage area obtained by the Contractor shall not obstruct or interfere with pedestrian or vehicular movement, and shall not occupy any space within the public right-of-way, except with specific permission from the Owner.

3. The storage / staging areas shall be kept neat at all times.

4. The storage / staging areas shall be surrounded by erosion controls.

5. The Owner shall not be a party to negotiations related to acquisition of areas for storage or cleanup of the same.

3.02 - EQUIPMENT

A. Contractor shall transport all equipment to the site, assemble the equipment, disassemble equipment and remove as needed to proceed with the work. During construction, all equipment and materials shall be maintained as needed during the work.

END OF SECTION

SECTION 01510

TEMPORARY UTILITIES

PART 1 – GENERAL

1.01 SCOPE OF WORK

The work of this Section shall consist of providing the following temporary utilities:

1. Water
2. Sanitary Facilities
3. Drainage
4. Heat and Weather Protection
5. Power

PART 2 – PRODUCTS

2.01 TEMPORARY WATER

A. Drinking water shall be provided by the Contractor for his personnel and the personnel of his subcontractors.

B. Water for construction purposes shall be furnished by the Contractor.

2.02 TEMPORARY SANITARY FACILITIES

Sanitary conveniences, properly screened from public observation, for the use of all persons employed on the Work and beginning with the first man engaged in preliminary operations, shall be provided and maintained by the Contractor in sufficient numbers through the completion of the Work.

2.03 TEMPORARY DRAINAGE

Temporary drainage and stormwater conveyance as necessary shall be provided by the Contractor to keep the working area dry.

2.04 TEMPORARY POWER

Temporary power shall be provided by the Contractor to operate machinery, equipment, dewatering efforts and all other tasks necessary to complete the work.

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01545

PROTECTION OF PROPERTY

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall provide all necessary protection of existing property to prevent any damage to property adjacent to the construction.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 PROTECTION OF PROPERTY

A. The Contractor shall, at his own expense, preserve and protect from injury all property either public or private along and adjacent to the line of work, and be responsible for and repair any and all damage and injury thereto, arising out of or in consequence of any act or omission of the Contractor.

1. All existing poles, wires, fences, mailboxes, stone walls, curbs, etc., shall be maintained in working order throughout the duration of construction. If damaged, each shall be restored to at least as good condition as that in which they were found immediately prior to the start of work.

2. Lawns, shrubs, bushes, planting beds, decorative trees, and agricultural fields disturbed or damaged shall be restored to a condition equal to that found prior to the start of construction, either by temporary transplant or replacement in kind, except as otherwise indicated on the Contract Drawings.

3. Property which has been damaged and replaced shall be equal in quality and workmanship to the damaged property and shall be subject to the approval of the property owner.

END OF SECTION

SECTION 01562

DUST CONTROL

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals to perform all work required for dust control during construction operations under this contract and as directed by the Engineer.

PART 2 - PRODUCTS

2.01 CALCIUM CHLORIDE

A. Calcium chloride shall conform to the requirements of AASHO-M 144, Type I or Type II and Specification for Calcium Chloride, ASTM D98. The calcium chloride shall be packaged in moisture proof bags or in airtight drums with the manufacturer, name of product, net weight, and percentage of calcium chloride guaranteed by the manufacturer legibly marked on each container.

B. Calcium chloride failing to meet the requirements of the aforementioned specifications or that which has become caked or sticky in shipment may be rejected by the Engineer.

PART 3 - EXECUTION

3.01 CONTROL

A. Contractor shall utilize all dust control measures necessary to keep dust emissions at the site within safe acceptable levels. Such dust control measures may include sweeping, the use of dust suppressants (calcium chloride), wetting, traffic reduction, covers on earth moving equipment, etc. Should the Engineer determine that dust emissions from the Contractor's work are excessive, the Contractor shall stop work, without penalty to the Town or Owner, until additional dust control measures are employed and dust levels are reduced to an acceptable level.

B. All other acceptable methods of dust control shall be implemented before resorting to chemical applications for dust control.

C. The Contractor shall be responsible for any accumulated dust control water and/or wash water which shall be collected and filtered through a 5 micron filter prior to discharge in accordance with the regulations.

3.02 CALCIUM CHLORIDE

A. Calcium chloride shall be applied when ordered by the Engineer.

B. Calcium chloride shall be uniformly applied at the rate of 1-1/2 pounds per square yard or at any other rate as directed by the Engineer. Application shall be by means of a mechanical spreader, or other approved methods. The number and frequency of applications shall be determined by the Engineer.

END OF SECTION

SECTION 01567

ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.

B. The requirements set forth in this section of the specifications apply to cross country areas, stream crossings and areas adjacent to wetlands, unless otherwise specifically stated.

C. The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

D. The Contractor shall comply with all applicable environmental Federal, state, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

E. The Contractor shall ensure compliance with this section by subcontractors.

1.02 DEFINITIONS

A. Environmental Pollution and Damage: Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

B. Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

C. Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction.

D. Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil

conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with applicable regulations.

1.03 NOTIFICATION

A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Engineer may order stoppage of all or part of the work until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop orders shall be made unless it was later determined that the Contractor was in compliance.

1.04 AREAS OF CONSTRUCTION ACTIVITY

A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the Contract Drawings and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

B. Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor’s personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

1.05 PROTECTION OF WATER RESOURCES

A. The Contractor shall not pollute streams, lakes, reservoirs or groundwater with fuels, oils, bitumens, calcium chloride, acids or harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.

B. Special measures should be taken to insure against spillage of any pollutants into public waters.

C. The Contractor shall take extra precautions to ensure that no pollutants enter surface waters of the State of Massachusetts or the groundwater table within the construction area. The Contractor shall not store hazardous fuels or other potential contaminants on the construction site and shall take immediate action if any spills occur. This shall

include removal of any contaminated soil and replacement with clean fill. In the event of a spill, the Engineer shall be notified immediately.

D. Refueling of construction equipment shall be performed offsite on an impervious area capable of retaing oil and/or fuel spill without a release to the environment. All equipment washing shall be performed off-site.

1.06 LOCATION OF STORAGE AREA

A. The location of the Contractor's storage areas for equipment and/or materials shall require written approval of the Engineer. Drawings showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.

B. A change in the location of the Contractor's storage areas for equipment and/or materials shall require written approval of the Engineer.

C. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of twenty-five (25) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of baled hay or straw around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

1.08 SITE CLEARING AND STABILIZATION

A. The Contractor shall clear and grub only the area required for construction operations as shown on the Contract Drawings.

B. The Contractor shall only clear, excavate, and/or temporarily destabilize areas that may be quickly repaired and/or completed within three (3) days or less in the event of adverse weather, such as heavy rains, winds, or other storms that could potentially affect the project area or raise river water levels such that continued work or immediate repair is otherwise impractical.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01570

TRAFFIC CONTROL

PART 1 – GENERAL

1.01 SCOPE OF WORK

The work under this Section shall consist of maintaining and protecting traffic in the project area to the satisfaction of the applicable Local Regulatory Agencies, and the Owner. The Contractor must maintain pedestrian and vehicular traffic and permit access to all properties, driveways, and streets for the duration of the project.

PART 2 – PRODUCTS

2.01 TRAFFIC SIGNS

The Contractor shall furnish light and maintain traffic signs as may be directed, or may be necessary for the safe regulation, or convenience of traffic.

A. Said signs shall be as shown or noted on the Contract Drawings or elsewhere herein, or if not specified, they shall be adequate for the regulation, safety and convenience of traffic and in conformance with the applicable requirements of the State/Federal Manual on Uniform Traffic Control Devices.

2.02 BARRICADES

Suitably lighted barriers or barricades shall be furnished by the Contractor and put up and maintained at all times during the night or daytime, around all open ditches, trenches, excavation, or other work potentially dangerous to traffic.

A. Such barricades shall be as shown on the Contract Drawings, or if not shown, shall be constructed of 2 inch by 8 inch rough lumber, securely supported, braced and at least 3 feet high above the ground.

B. Barricades shall be placed on all sides and throughout the entire length and breadth of all open ditches, trenches, excavations, or other work which must be barred to the general public.

C. Barricades shall be properly painted to the satisfaction of the Local Regulatory Agency in order to retain a high degree of visibility to vehicular and pedestrian traffic.

2.03 FLASHERS

The Contractor shall furnish and securely fasten flashing units to signs, barricades, and other objects in such numbers and for such lengths of time as are required for the maintenance and protection of traffic.

A. The flashers shall be in operation during all hours between sunset and sunrise, and during periods of low visibility.

B. Suitably lighted barricades shall be defined as barricades lit by flashers in accordance with this Section or other lighting methods approved by the Local Regulatory Agency in lieu thereof.

C. Flashers shall be placed along the entire length of the barricades at an interval no greater than 8 feet, center to center. Flashers shall be power operated, lens directed, enclosed light units which shall provide intermittent light from 70 to 120 flashers per minute, with the period of light emittance occurring not less than 25 percent of each on-off cycle, regardless of temperature.

D. The emitted light shall be yellow in color and the area of light on at least one face of the unit shall be not less than 12 square inches. The discernible light shall be bright enough to be conspicuously visible during the hours of darkness at a minimum distance of 800 feet from the unit under normal atmospheric conditions.

E. For units which beam light in one or more directions, the foregoing specifications shall apply 10 degrees or more to the side and 5 degrees or more above and below the photometric axis.

2.04 TEMPORARY BRIDGING

The Contractor shall include in his bid, bridging for trenches at all street and driveway crossings in such manner as the Local Regulatory Agency may direct for the accommodation and safety of the traveling public, to provide facilities for access to private driveways for vehicular use, and to prevent blocking of intersecting traffic.

A. He shall erect suitable barriers around the excavation to prevent accidents to the public and shall place and maintain, during the night, sufficient lights on or near the work.

B. A space of 20 feet must be left so that free access may be had at all times to fire hydrants and proper precautions shall be taken so that the entrances to fire hydrants and fire stations shall not be blocked or obstructed.

2.05 DETOURS

Temporary detours shall be constructed on the site as proposed by the Contractor and approved by the Applicable State and/or Local Authorities required by the Contract Drawings or specified elsewhere herein.

A. Detours shall not have grades in excess of 10% anywhere along their lanes unless otherwise shown on the Contract Drawings. Detours shall be smooth riding.

B. Suitable barricades shall be installed continuously along both sides of a detour where:
   1. The adjacent side slope is steeper than 1 on 6 inches.
   2. The Contractor's operations or equipment may operate within 20 feet of the detour.
   3. Other unsafe conditions requiring them for the protection of traffic along the line of detour.

2.06 TRAFFIC CONES AND DRUMS

A. As approved by local jurisdictions.

2.07 MISCELLANEOUS

A. The Contractor may be required to employ traffic persons and take other such reasonable means or precautions as the Local Regulatory Agency may direct, or as may be needed to prevent damage or injury to persons, vehicles, or other property, and to minimize the inconveniences and danger to the public by his construction operations.

PART 3 - EXECUTION

3.01 CONTROL OF TRAFFIC

A. It shall be the sole responsibility of the Contractor to keep the Local Regulatory Agencies (including but not limited to the Police and Fire Departments) pre-warned at least 72 hours in advance of changes in traffic patterns due to reduction of pavement widths or closing of streets.

B. The Contractor shall supply, install, maintain, adjust, move, relocate, and store all signs, suitably lighted barricades, traffic cones, and traffic delineators, as necessary to carry out the traffic routing plan and maintain vehicular and pedestrian traffic.

   1. All of this work shall meet with the requirements of the Local Regulatory Agencies.

2. The Contractor shall maintain, relocate and operate barricades and flashers throughout the life of this Contract.

C. Should the Contractor or his employees neglect to set out and maintain barricades or lights, as required in these Specifications, the Owner immediately, and without notice, may furnish, install and maintain barricades or lights.

1. The cost thereof shall be borne by the Contractor and may be deducted from any amount due or to become due to the Contractor under this Contract.

3.02 ACCESS TO PROPERTY AND UTILITIES

A. The Contractor shall arrange his operations to provide access to properties along the street including temporary bridges to driveways, and provide access to fire hydrants, manholes, gate boxes, or other utilities.

1. Whenever any trench obstructs traffic in or to any public street, private driveway, or property entrance, the Contractor shall take such steps as required to maintain necessary traffic and access including temporary bridging if required.

2. The Contractor shall confine his occupancy of public or traveled ways to the smallest space compatible with the efficient and safe performance of the work contemplated by the Contract.

3. If the Contractor's operations or occupancy of any public street or highway, or the uneven surfaces over any trenches being maintained by the Contractor shall interfere with the removal or sanding of snow or ice by the public authorities or adjoining land owners, in an ordinary manner with regular highway equipment, the Contractor shall be required to perform such services for the public authorities or adjoining owners without charge.

4. If the Contractor fails to do so, he shall reimburse the said authorities or adjoining owners or the Owner for any additional cost to them for doing such work occasioned by conditions arising from the Contractor's operations, occupancy, or trench surfaces, together with any damage to the equipment of said parties by those conditions or claims of any parties for damage or injury or less by reason of failure to remove snow or ice or to sand icy spots under these conditions.

5. The Contractor shall observe and obey all local and state laws, ordinances, regulations and permits in relation to the obstruction of streets and highways, keeping passageways open and protecting traffic where there may be danger from blasting or other construction activities.

B. The Contractor shall be held responsible for any damages that the Engineer, Owner, Governmental units, or their heirs or assigns may have to pay as a consequence of the Contractor's failure to protect the public from injury, and the same may be deducted from any payments that are due or may become due to the Contractor under this Contract.

3.03 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Owner’s operations.

B. Monitor parking of construction personnel’s vehicles [in the existing facilities]. Maintain vehicular access to and through parking areas.

C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.04 TRAFFIC OFFICERS

A. When in the opinion of the Engineer, Director of Highway Department or Police Chief, public safety and/or convenience require the service of the police, the person may direct the Contractor to request the Police Department to assign officers to direct traffic within the location of the work under the contract.

3.05 TRAFFIC SIGNS

A. At approaches to site and on site, install at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.

END OF SECTION

SECTION 01710

CLEANING UP

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor must employ at all times during the progress of his work adequate clean up measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon direction by the Engineer provide adequate material, equipment and labor to clean up and make safe any and all areas deemed necessary by the Engineer.

1.02 DAILY CLEAN UP

A. The Contractor shall clean up at least daily, all refuse, rubbish, scrap and surplus material, debris, and unneeded construction equipment resulting from the construction operations. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.

B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.

C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, the Engineer reserves the right to stop all other work on the project until the clean up is satisfactory.

1.03 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES

A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

1.04 RESTORATION OF DAMAGED PROPERTY

A. The Contractor shall restore or replace, when and as directed, any 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 work to repair roadways, driveways, levy, agricultural fields, landscaping, and any and all other work necessary to restore areas to existing conditions or better. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

1.05 FINAL CLEAN UP

A. Before acceptance by the Owner, the Contractor shall perform a final clean up of the site and surrounding area to its original or specified condition. This clean up shall

include removing all trash and debris off the site. Before acceptance, the condition of the site shall be approved by the Engineer.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01720

CLOSEOUT

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This section provides information and procedures for terminating the agreement between the Contractor and the Owner at the completion of the Project.

1.02 PROJECT RECORD DOCUMENTS

A. The Contractor shall maintain on-site one complete set of record documents. These record documents shall indicate actual revisions to the Work. The Contractor shall ensure entries are complete and accurate, enabling future reference by DCR. The set of record documents shall include: attachments; reviewed product data and samples; specifications; addenda; change orders and other modifications to the Contract; and material disposal records.

B. Information shall be recorded concurrent with construction progress. Failure to maintain current record attachments will be cause to delay payment.

1.03 CLOSEOUT PROCEDURES

A. Project closeouts shall be performed at the conclusion of the construction period.

B. Submittals shall be provided to Engineer that are required by governing or other authorities, including copies of any permit reporting documentation or disposal waste slips.

C. For items of Work delayed beyond date of Substantial Completion, the Contractor shall provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

D. The Contractor shall supervise and direct the work, using his best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques and procedures and for coordinating all portions of the work under the Contract.

E. The Contractor shall carefully check his own work and that of subcontractors as the work is being performed. Unsatisfactory work shall be corrected immediately.

F. During the finishing stages of the project, the Contractor shall make frequent inspections with the subcontractors and the Engineer so as to progressively check for and correct faulty work.

G. When the Contractor determines that he is substantially complete, that he has less than one percent of his contract remaining to be completed, he shall prepare for submission to the Engineer a list of items to be completed or corrected. The failure to

include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.

H. Upon receipt of the Contractor's list of items to be completed or corrected, the Engineer will promptly make a thorough inspection and prepare a "punch list", setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable.

I. When the "punch list" has been prepared, the Engineer will arrange a meeting with the Contractor and subcontractors to identify and explain all "punch list" items and answer questions on the work which must be done before final acceptance.

J. If the Contractor gives notice that a subcontractor has completed his "punch list" items, the Engineer will inspect that portion of the work and, if the items are found to be satisfactorily completed, advise the Contractor accordingly.

K. The Contractor shall correct all "punch-list" items or shall cause the correction of the "punch list" items within a time frame to be established when the punch list is made. The time frame for the completion of the "punch list" shall not exceed the completion date of the contract.

1.04 GUARANTEES AND WARRANTIES

A. The Contractor shall guarantee the materials and workmanship under this contract to be free of defects for a period of one year from the date of acceptance agreeing to replace or repair any defective materials or work during such period, without additional cost to the Owner.

B. The Contractor shall obtain from all subcontractors a written guarantee that all materials and workmanship under this contract will be free of defects for a period of one year from the date of acceptance agreeing to replace or repair any defective materials or work during such period, without additional cost to the Owner.

C. The Contractor shall warranty all vegetative cover, seed, brush cuttings, plants, planting plugs, live stakes and saplings for a period of at least 1 year, at which point the Owner shall do a final inspection on the vegetative cover to determine if a satisfactory vegetative cover has been established, defined as a minimum seeded coverage of 75%. Areas that are determined to be unsatisfactory shall be repaired by the Contractor at no cost to the Owner. The Contractor shall also warranty live stakes and plants for a period of at least 1 year. Plants, trees, brush cuttings and/or stakes that do not survive shall be replaced by the Contractor at no cost to the Owner.

D. The Contractor shall submit all warranty certificates signed by the manufacturers and suppliers with a written certification that nothing in the installation will render the warranty null and void.

SECTION 01720

CLOSEOUT

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

Civil

Technical Specifications

Section 02000

SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Documents affecting work of this Section include, but are not necessarily limited to, the Drawings, General Specifications, Special Conditions, and these Specifications.

Section 02271 – RIPRAP

Section 02505 – RECLAIM

Section 02527 – POROUS ASPHALT PAVEMENT

1.02 DESCRIPTION OF WORK

A. Extent of earthwork is indicated on Drawings and includes excavation and backfilling for the infiltration basin, trenches, structures, surface grading, and other incidental earthwork.

B. "Excavation" consists of removal of material encountered to subgrade elevations indicated, and subsequent relocation or disposal of materials removed.

1.03 QUALITY ASSURANCE

A. Codes and Standards:

1. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

2. The following standard forms a part of these specifications and indicates the minimum standards required:

American Society for Testing and Materials (ASTM)

ASTM D422	Method for Particle Size Analysis of Soils
ASTM D1557	Tests for moisture-density relations of soils and soil-aggregate mixtures using 10 pound rammer and 18-inch drop.
ASTM D4253	Test Methods for Maximum Index Density of Soils Using a Vibratory Table

ASTM D4254 Test Methods for Minimum Index Density of Soils and Calculation of Relative Density

The Commonwealth of Massachusetts

Massachusetts Highway Department (Mass Highway) Standard Specifications for Highway and Bridges Public Work

B. Owner will engage soil testing and inspection service for quality control testing during earthwork operations.

1.04 JOB CONDITIONS

A. Existing Utilities:

1. Locate existing underground utilities in areas of work. Utility companies shall be contacted a minimum of 72 hours prior to excavation and/or site work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.

2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

3. Do not interrupt existing utilities serving facilities occupied and used by owner or others, during occupied hours, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.

4. Provide minimum of 48-hour notice to Engineer, and receive written notice to proceed before interrupting any utility.

5. Do not bring explosives onto site or use in work without prior written permission from authorities having jurisdiction. Contractor is solely responsible for handling, storage, and use of explosive materials when their use is permitted.

B. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work and post with warning lights.

2. Operate warning lights as recommended by authorities having jurisdiction.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

4. Perform excavation within drip-line of large trees to protect the root system from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with burlap. Paint root cuts of 1" diameter and larger with emulsified asphalt tree paint.

1.05 SUBSURFACE EXPLORATIONS

Subsurface Explorations for Design:

A. Test pits have been conducted at the locations shown on the Drawings for the purpose of guidance in the design of the project facilities. Copies of the test pit logs are included in Appendix A for information only.

B. The test pit data is not intended to indicate subsurface conditions except at the locations of the samples (at the time sampling was conducted) and any interpretations the Contractor may make is the Contractor's responsibility.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, and SP.

B. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

C. Sand Borrow:

Sand shall consist of bank run sand conforming to the following requirements determined by ASTM D422:

Sieve Opening	Percent Passing Weight
1-inch	100
1/2-inch	50-100
No.20	20-95
No.50	10-60
No.200	0-8

D. Crushed Stone:

1. Crushed Stone shall not contain vegetation, masses of roots, loam and other organic matter, clay and other fine or harmful substances.

2. 3/8- INCH PEA STONE:
Materials shall consist of natural, rounded, sound, durable sand and gravel, essentially free of organic matter, plastic fines (clay), debris and shall conform to and meet the requirements specified in this section with the gradation requirements listed below:

Sieve Opening	Percent Passing By Weight
½ -inch	100
⅜-inch	85-100
No. 4	20-50
No. 8	0-15
No. 16	0-5

3. ¾ -INCH CRUSHED STONE:
Materials shall conform to MHD M2.01.4 Crushed Stone and meet the requirements specified in this section with the gradation requirements listed below:

Sieve Opening	Percent Passing By Weight
1 -inch	100
¾ -inch	90-100
½ -inch	10-50
⅜ -inch	0-20
No. 4	0-5

4. 1½-INCH CRUSHED STONE:

Materials shall conform to MHD M2.01.1 Crushed Stone and meet the requirements specified in this section with the gradation requirements listed below:

Sieve Opening	Percent Passing By Weight
2 -inch	100
1½ -inch	95-100
1-inch	35-70
¾ -inch	0-25

E. Riprap: Riprap stone for Pipe Ends, Embankments and Emergency Spillways shall be as specified in Specification Section 02271 RIPRAP.

F. Bentonite Clay Mixture: Bentonite Clay for Anti-seep Pipe Collars shall be as specified in Specification Section 02272 ANTI-SEEP COLLARS.

G. Gravel Borrow:

Gravel Borrow shall consist of sound, durable sand and gravel, essentially free of organic matter, plastic fines (clay) and debris, and shall meet the gradation requirements below:

Sieve Opening	Percent Passing Weight
3-inch	100
1/2-inch	50-85
No. 4	40-75
No. 40	10-45
No. 200	0-8

H. Slope Drainage Aggregate: Drainage aggregate shall consist of angular, sound, durable stone as a product from crushing operations and shall be essentially free of organic matter, plastic fines (clay) and debris. Materials shall conform to MHD M2.01.6 Crushed Stone and meet the requirements specified in this section with the gradation requirements listed below:

Sieve Opening	Percent Passing By Weight
½ -inch	100
⅜-inch	85-100
No. 4	20-50
No. 8	0-15
No. 16	0-5

I. Ordinary Borrow: Shall consist of a material satisfactory to the engineer and not specified as gravel borrow, sand borrow or drainage aggregate. This material shall have the physical characteristics of soils designated as group A1, A-2-4 or A-3 under AASHTO M 145. It shall have properties such that it may be readily spread and compacted for the formation of embankments.

J. Base Fill: Shall consist of washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100% passing a 1-1/2” sieve and not more than 5% passing a No. 4 sieve.

K. Backfill Materials:

1. Backfill Materials shall conform to MHD M1.01.0 Ordinary Borrow as specified above. It shall have properties such that it may be readily spread and compacted for the formation of embankments.

2. Backfill Materials shall be satisfactory soil materials and meet the approval of the Engineer. Materials shall be of such a nature that they will form a stable dense fill. Materials shall not contain vegetation, masses of roots, individual roots more than 12 inches long or more than 1/2-inch in diameter, trash, clays, frozen materials, or plastic fines. Organic matter shall not exceed 2%. Non-plastic fines shall not exceed 20% (silts).

3. Backfill materials are subdivided according to the maximum allowable size of stone or blacktop pieces as follows:

Type	Largest Stone Diameter (inches)
1. Select Backfill	3
2. Class B Backfill	6
3. Class C Backfill	12

L. Loam/Topsoil materials shall be as specified in Specification Section 02900 VEGETATIVE SUPPORT MATERIAL.

M. Hydric Soil materials shall be as specified in Specification Section 02900 VEGETATIVE SUPPORT MATERIAL.

PART 3 - EXECUTION

3.01 EXCAVATION

A. Excavation includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.

B. Rock Excavation Classification:

The following classifications of excavation will be made when rock excavation is encountered in work:

1. Earth excavation includes excavation of pavements and other obstructions visible on ground surface; underground structures, utilities and other items indicated to be demolished and removed; together with earth and other

materials encountered that are not classified as rock or unauthorized excavation.

2. Rock excavation in trenches and pits includes removal and disposal of materials and obstructions encountered which cannot be excavated with a 1.0 cubic yard (heaped) capacity, 42" wide bucket on track-mounted power excavator, rated at not less than 90 HP flywheel power and 30,000 lb. drawbar pull. Trenches in excess of 10'-0" in width, and pits in excess of 30'-0" in either length or width, are classified as open excavation.

3. Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered which cannot be dislodged and excavated with modern track-mounted, heavy-duty, excavating equipment without drilling, blasting, or ripping. Rock excavation equipment is defined as track-mounted loader, rated at not less than 170 HP flywheel power and developing 40,000 lb. break-out force (measured in accordance with SAE J732C).

4. Typical of materials classified as rock are boulders 1/2 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.

5. Intermittent drilling, blasting, or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.

6. Do not perform rock excavation work until material to be excavated has been cross-sectioned and classified by Engineer. Such excavation will be paid on basis of contract conditions relative to changes in work.

7. Rock Payment Lines:

   Rock payment lines are limited to the following:

   a. Two foot outside perimeter of leaching catch basins and manholes, drainage structures, baffle tanks, catch basins and manholes.

   b. Under drainage structures, 6" below bottom of device.

C. Unauthorized Excavation:

1. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be at Contractor's expense.

2. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Engineer.

3. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

D. Shoring and Bracing:

1. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition, where required.

2. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.

3. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.

E. Dewatering:

1. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.

2. Do not allow water to accumulate in excavations. Remove water to prevent softening of treatment device bottoms, and soil changes detrimental to stability of subgrades treatment devices. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

3. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

F. Material Storage:

1. Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

2. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.

3. Dispose of excess soil material and waste materials as herein specified.

G. Excavation for Structures:

1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10', and extending a sufficient distance from stormwater treatment

device structures to permit placing of devices, connections, other construction, and for inspection.

H. Excavation for Pavements: Cut surface under pavements to comply with cross-sections, elevations, and grades as shown on Drawings.

I. Excavation for Trenches:

1. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 6" to 9” clearance on both sides of pipe or conduit.

2. For pipe trenches with anti-seep collars, excavate an area deeper and wider than the uniform pipe trench to provide ample room for bentonite clay or concrete anti-seep collar as specified in Section 02272 ANTI-SEEP COLLARS

3. Trenches in pavement shall have the traveled way surface cut in a straight line by a concrete saw or equivalent method, to the full depth of pavement. Excavation shall only be between these lines. Cutting operations shall not be done by backhoe, gradall, or other ripping equipment.

4. Excavate trenches to depth indicated or required.

5. Where pipe is to be laid in crushed stone bedding or concrete cradle, the trench may be excavated by machinery to, or to just below the designated depth, provided that the material remaining at the bottom of the trench remains undisturbed.

6. If pipe is to be laid in embankments or other recently filled areas, the fill material shall first be placed to a height of at least 1 foot above the top of the pipe before excavation. Material under the pipe location shall be compacted to 95 percent maximum density according to ASTM D1557, Method C.

7. Where rock is encountered, carry excavation 6” below required elevation and backfill with a 6” layer of crushed stone or gravel prior to installation of pipe.

J. Earth Excavation And Backfill Below Normal Grade

1. If, in the opinion of the Engineer existing material below trench grade is unsuitable for properly placing bedding material and laying pipe, the Contractor will excavate, remove, and dispose of the unsuitable material to the required width and depth and replace it with gravel borrow as directed by the Engineer.

2. Do not backfill trenches until tests and inspections have been made and backfilling is authorized by Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.

3. For piping or conduit less than 2'-6" below surface of roadways, provide 4" thick concrete base slab support. After installation and testing of piping or conduit, provide minimum 4" thick encasement (sides and top) of concrete prior to backfilling or placement of roadway subbase.

K. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F (one degree C).

3.02 COMPACTION

A. With the exception of the Infiltration Basin and Forebay floors (which are detailed on the drawings) control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.

B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density for soils which exhibit a well-defined moisture density relationship (cohesive soils) determined in accordance with ASTM D 1557; and not less than the following percentages of relative density, determined in accordance with ASTM D 2049, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils).

1. Structures, Building Slabs and Steps, Pavements: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum density for cohesive material or 75% relative density for cohesionless material.

2. Detention Pond Berm and Fill for Eroded Trench: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum density for cohesive material or 75% relative density for cohesionless material.

3. Lawn or Unpaved Areas: Compact top 6" of subgrade and each layer of backfill or fill material at 92% maximum density for cohesive soils and 72% relative density for cohesionless soils.

4. Walkways: Compact top 6" of subgrade and each layer of backfill or fill material at 95% maximum density for cohesive material or 75% relative density for cohesionless material.

C. The requirements for compaction of backfill shall conform to the following guidelines based on ASTM D1557, Method C:

Location	Percent Maximum Density
Below pipe centerline	95

Above pipe centerline	92
Below pavement (upper 3 ft)	95
Embankments	92
Below pipe in embankments	95

D. Moisture Control:

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

E. Crushed Stone:

1. Material shall be placed to insure that no excessive voids occur which could lead to uneven structural settlement.

3.03 BACKFILL AND FILL

A. Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.

1. In excavations, use backfill material in conformance with MHD M1.01.0 Ordinary Borrow.

2. Under grassed areas, use backfill material in conformance with MHD M1.01.0 Ordinary Borrow.

3. Under walks and pavements, use gravel borrow or select backfill, or combination of both.

4. Under precast concrete structures, use 6 inches of 1-1/2” - 2” inch stone over select backfill.

4. Under piping and conduit, use crushed stone where crushed stone is indicated under piping or conduit; shape to fit bottom 90 degree of cylinder.

5. In Berm and Fill areas, use backfill material in conformance with MHD M1.01.0 Ordinary Borrow

6. In Slope Drain areas where excavation has occurred for structure installation, use backfill material in conformance with MHD M1.01.0 Ordinary Borrow up to 18 inches below finished grades. On top or ordinary borrow, use slope drain aggregate in a 12” layer and a 6” layer of top soil.

7. Any exposed cobbles or rocks greater than three (3) inches in diameter in Backfill material used within the reconstituted area shall be “culled-out” and removed from the site. The Contractor shall provide laboratory soil tests to test results certifying gradation material meet the above Gradation Table.

B. Backfill excavations as promptly as work permits, but not until completion of the following.

1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.

2. Inspection, testing, approval and recording locations of underground utilities.

3. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.

4. Removal of trash and debris.

5. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

C. Ground Surface Preparation:

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

2. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

D. Placement and Compaction: Place backfill and fill materials in layers not more than 9” in loose depth for material compacted by heavy compaction equipment, and not more than 4”-6” in loose depth for material compacted by hand-operated tampers.

E. Backfilling:

1. In general, and unless other material is indicated on the Drawings or specified or classified as unsuitable material by the Engineer, material removed in-the

course of making the construction excavation shall be suitable material for backfilling trenches.

2. If the material removed from the excavation is suitable for backfill with the exception that it contains stone or pavement sections having a maximum allowable size larger than that specified, the Contractor has the option to remove the oversized materials from the backfill or provide replacement backfill without additional compensation.

3. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

4. Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.

F. Backfilling Pipe Trenches:

1. As soon as practicable after pipes have been laid, backfilling shall be started.

2. Select backfill shall be placed with care up to a level of 6 inches above the top of pipe. This area of backfill is considered the zone around pipe and shall be thoroughly compacted before the remainder of the trench is backfilled. Compaction of the zone around pipe shall be done by use of power-driven tampers weighing at least 20 pounds. Care shall be taken that material close to the bank, as well as in all other portions of the trench, is thoroughly compacted to densities required.

3. Class B backfill shall be placed from the top of the select backfill to grade. Compaction of backfill in the remainder of the trench shall be done in layers not exceeding 12 inches in depth, and by use of power-driven tampers weighing at least 20 pounds. In lieu of mechanical compaction equipment, water jetting may be used only when approved by the Engineer.

4. The Contractor shall maintain the trench surface as work progresses. If settlement takes place, he shall immediately deposit additional material to restore the level of the ground.

5. The Contractor will prepare backfill areas for pipes with anti-seep collars as shown on the Contract Drawings and as specified in Section 02272 ANTI-SEEP COLLARS

3.04 GRADING

A. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:

1. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10’ above or below required subgrade elevations.

2. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10’ above or below required subgrade elevation.

3. Pavements: Shape surface of areas under pavement to line, grade and cross-section, with finish surface not more than 1/2” above or below required subgrade elevation.

C. Grading Surface of Fill Under Treatment Device Structures: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/2” when tested with a 10’ straightedge.

D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.05 PAVEMENT SUBBASE COURSE

A. Subbase course consists of placing gravel borrow material, in layers of specified thickness, over subgrade surface to support a pavement base course.

B. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.

C. Place shoulders along edges of subbase course to prevent lateral movement. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each subbase course layer. Compact and roll at least a 12” width of shoulder simultaneously with compacting and rolling of each layer of subbase course.

D. Placing: Place subbase course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations. The course shall be spaced in layers not more than a 6-inch thick subbase.

3.06 QUALITY CONTROL

A. Quality Control Testing prior to Construction: Allow certified testing service to inspect and approve proposed earth material before the start of construction work is performed at a frequency as specified in SECTION 01600 MATERIAL TESTING AND INSPECTION.

B. Quality Control Testing during Construction: Allow certified testing service to inspect and approve subgrades and fill layers before further construction work is performed at a frequency as specified in SECTION 01600 MATERIAL TESTING AND INSPECTION.

A. Quality Control Re-Testing: Allow certified testing service to re-test material and perform subsequent quality control tests as specified or as directed by the Engineer. Any additional re-test of previously failed tests or material and any response to contingency events shall be the responsibility of the contractor, and no work further earthwork will commence until a passing test has been achieved.

3.07 MAINTENANCE

A. Protection of Graded Areas:

1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
2. Repair and re-establish grades - in settled, eroded, and rutted areas to specified tolerances.

B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

C. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.08 DISPOSAL OF EXCESS AND WASTE MATERIALS

Excavated material shall be transported off Owner’s property and disposed of at the Contractor’s expense in a legal manner.

END OF SECTION

SECTION 02221

TRENCH EXCAVATION, EARTH AND BACKFILL

PART 1 - GENERAL

1.1 SCOPE OF THE WORK

The Work and materials required by this Section consist of excavating, backfilling, compacting, grading, furnishing and installing fill for the construction of pipelines, structures, pavement and appurtenant work, below grade excavation and refills of unsuitable material, removal of existing pipelines and structures and all other incidental work necessary the construction of pipelines, structures, pavement and appurtenant work in accordance with the Contract Drawings, the Specifications and as directed by the Owner.

The Work also includes installing, shoring and bracing as the excavation proceeds, furnishing approved engineered fill from off-site sources when directed for backfills of excavation and refills of below-grade excavations; excavation and disposal of pavement, excavate, removal and disposal of surplus and unsuitable materials; protection of existing pipelines, utilities and structures and of new work, compaction of trench bottom, utility warning tape, backfills, refills and sub-grades, and all other appurtenant work as required or as directed by the Owner.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section 01561, "Water for Dust Control,"
Section 02015, "Test Pits,"
Section 02240, "Dewatering, Control and Diversion of Water,"
Section 02276, "Linear Sediment and Erosion Control,"
Section 02300, "Earthwork,"
Section 02601, "Precast Concrete Structures,"
Section 02616, "Cement Lined Ductile Iron Pipe and Fittings,"
Section 02620, "High Density Polyethylene Pipe and Fittings,"
Section 02920, "Lawns and Grasses."

1.3 DEFINITIONS

A. The words "finished grades" as used herein shall mean final grade elevations where indicated on the Contract Drawings. Spot elevations shall govern over proposed contours.

B. The word "Earth", wherever used as the name of an excavated material or material to be excavated shall mean all kinds of material other than rock as defined in Section 02300, Earthwork.

1.4 EXAMINATION OF SITE AND DOCUMENTS

A. It is hereby understood that the Contractor has carefully examined the site and all conditions affecting the Work under this Section.

B. Plans, surveys, measurements and dimensions under which the Work is to be performed are believed to be correct to the best of the Owner's and Engineer's knowledge, but the Contractor shall have examined them for itself during the bidding period. The·accuracy of this information is a function of the development method. There may be variations in actual conditions with respect to the Contract Drawing depictions, which shall not be grounds for additional cost claims. Any significant discrepancies found shall be immediately brought to the Engineer's attention. The Contractor shall propose remedial earthwork measures to offset any revealed discrepancies.

1.5 SUBMITTALS

A. The Contractor shall submit for Engineer approval a minimum of two (2) weeks prior to the intended start of the test pit performance his proposed test pit relocations, additions and planned test pit means, methods and schedule.

B. The Contractor shall submit for Engineer approval a minimum of three (3) weeks prior to intended start of Project earthwork operations its proposed earthwork construction: means, methods, sequence, equipment and schedule, which shall be applicable to identifying, segregating, site processing and stockpiling excavated soils for reuse as well as for all other earthwork operations. The Contractor shall identify its estimated quantities for site excavated soil reuse by fill category, off-site soil removal and imported fill soils/stone. The imported material data shall include its source, gradation, Proctor moisture-density relationship and estimated amount. Reference is made to Part 1.lOD of this Section.

1.6 SITE CONDITIONS

A. Utilities, Piping and Underground Structures

The Contractor shall visit the premises to familiarize itself thoroughly with all details of the Work and of the working conditions, to verify all dimensions in the field and to advise the Engineer of any discrepancy before performing any Work. The Contractor shall consult official records of existing utilities, both surface and subsurface, and their connections, and shall fully inform itself of all existing conditions and limitations as they apply to the Work and of the extent and character of the Work required under this section and its relation to all other construction Work.

1.7 PERMITS, CODES AND SAFETY REGULATIONS

A. All Work shall conform to the Contract Documents and shall comply with applicable city, state and federal codes and regulations.

B. The Contractor shall comply with the rules, regulations, laws and ordinances of all authorities having jurisdiction including, but not limited to, the Owner, the MDEP and the Office of Dam Safety. All labor, materials, equipment and services necessary to make the Work comply with such requirements shall be provided without additional cost to the Owner.

C. The Contractor shall comply with the provisions of the *Manual of Accident Prevention in Construction* of the Associated General Contractors of America, Inc., and of OSHA.

D. The Contractor shall procure and pay for all permits and licenses required for the complete Work specified herein and shown on the Contract Drawings.

E. The Contractor shall not close or obstruct any existing roadways, sidewalks or other passageways. The Contractor shall conduct its operations to affect, as little as possible, the ordinarily use of all existing roads, driveways, sidewalks or other facilities near the Work. Parking areas shall be limited to those areas so designated by the Engineer.

F. The Contractor shall notify the utilities in the Project area to locate their respective utilities in accordance with Paragraph 15 of Section 01000, "DIG-SAFE Notification and Notification to Other Utilities."

1.8 DISPOSITION OF EXISTING UTILITIES

A. Active utilities existing in the site shall be carefully protected from damage and relocated or removed as required by the Work. When an active utility line is exposed during construction, its location and elevation shall be recorded, and the Engineer shall be notified in writing.

1.9 TRENCH BOX

Where the depth of trench exceeds five (5) feet, the Contractor shall utilize a trench box in accordance with OSHA requirements.

1.10 QUALITY ASSURANCE

A. General: All soil testing, both in the field and in the laboratory, shall be performed by a testing laboratory approved by the Owner. The Contractor shall make arrangements with the Laboratory to conduct such tests as the Owner determines.

B. Where soil material is required to be compacted to a percentage of maximum dry density, the maximum dry density at optimum moisture

content shall be determined in accordance with ASTM Designation D1557. In-place field density and soil moisture content tests shall be performed in accordance with ASTM Designation Dl556 and/or ASTM Designations D2922 and D3017. The number and location of field density tests shall be determined by the Engineer. In case the tests of the fill or backfill show non-compliance with the required density, the Contractor shall accomplish such remedy as may be required to insure compliance.

C. Where fill material is required to possess certain gradation, the grain size distribution of soils shall be determined using ASTM Designation D422. The gradation of concrete aggregate and base materials shall be determined using ASTM Designation C136. The sand equivalent of soils shall be determined using ASTM Designation D2419.

D. The Contractor shall excavate test pits where shown on the Contract Drawings. These test pits shall be excavated prior to earthwork operations and shall be the basis for the Contractor's earthwork schedule. Test pits shall be sized in the range of three (3) feet wide by ten (10) feet long by a depth equal to the existing or proposed pipe plus two (2) feet. Equipment proposed for the performance of test pits shall be included in the Contractor's pre-test pit submission to the Engineer. The Engineer-developed test pit quantity and locations shall be reviewed by the Contractor prior to performance. Contractor-proposed test pit relocations, additions, proposed test pit performance equipment and intended schedule for the test pit work shall be submitted to the Engineer for approval a minimum of two (2) weeks prior to intended start of test pit performance. Based upon test pit revealed subsurface conditions, additional test pits may be requested in the field during test pit performance, subject to the Engineer's direction. The Contractor may also request a meeting with the Engineer prior to test pit performance to discuss the Work.

Approved test pit locations shall be located in the field by the Contractor, using horizontal and vertical survey methods/controls. A listing of actual test pit locations and associated ground surface elevations shall be provided to the Engineer as soon as layout is complete. All test pits shall be performed under the observation of the Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Refer to Section 02300 Earthwork for all definition of earthwork materials.

PART 3 - EXECUTION

3.1 PROTECTION OF TREES AND SHRUBBERY

A. Existing trees and shrubbery to remain shall be protected from injury. Except as otherwise permitted, cutting and trimming of existing trees shall not be

permitted.

B. All existing trees which are to remain and which may be damaged by construction operations shall be boxed and protected as required or directed. All such protection shall be maintained until completion of the Work, unless otherwise directed.

C. Any existing trees or shrubs which are to remain and are damaged by construction operations or which are removed to facilitate construction, after approval by the Engineer, shall be replaced in kind by the Contractor to the satisfaction of the Owner at no additional expense to the Owner.

3.2 PROTECTION OF EXISTING UTILITIES AND STRUCTURES

A. Excavation and backfill operations in close proximity to existing utilities shall be done in accordance with the specific utility company's standards, in such a manner as to prevent cave-in or the undermining, damage or disturbing of existing utilities and structures or of the Work. Backfill shall be placed and compacted so as to prevent future settlement or damage to existing utilities and structures and the Work.

B. Any excavations improperly backfilled or where settlement occurs shall be reopened to the depth required, then refilled with new materials and compacted and the surface restored to the required grade and condition, at no additional expense to the Owner.

C. Any relief from damage due to excavation, backfilling or settlement of the backfill or injury to persons or damage to property occurring as a result of such damage shall be the responsibility of the Contractor. All costs to repair such damage, in a manner satisfactory to the Owner, shall be borne by the Contractor at no additional expense to the Owner.

3.3 EXCAVATION

A. Earth excavation shall include the excavation, removal and satisfactory disposal of all materials of whatever nature encountered from within the limits indicated or specified or as directed in writing, other than rock or ledge as defined in Section 02300, "Earthwork."

B. All excavation, sheeting, shoring and dewatering operations shall be accomplished to prevent the undermining or disturbing of existing pipelines, utilities and structures or of any completed construction.

C. Excavation shall be made to the lines and grades shown on the Contract Drawings or as modified by the Engineer. Excavations shall be accurately graded to allow satisfactory construction of the contract work. Immediately

after excavation to the indicated or directed trench bottom, the Contractor shall compact the exposed surface with two (2) passes of an approved plate-type vibratory compactor.

D. Bell holes and depressions for joints shall be dug after the trench bottom has been graded and compacted and after gravel bedding, if required, has been placed and compacted. The bottom quadrant of each pipe barrel shall have complete and uniform bearing for the full length of each pipe. The trench bottom shall again be thoroughly compacted just prior to final shaping for bedding and installation of pipe.

E. Excavation operations adjacent to and below existing structures and utilities shall be done manually and in a manner to prevent disturbance of or damage to the existing structures and utilities. Butt bracing of utility poles shall be utilized where necessary.

F. All existing pavements shall be carefully saw cut and removed to obtain sound, vertical edges to the lines indicated, at no additional cost to Owner. Existing pavements beyond the indicated lines which are to remain and which have been disturbed or damaged shall be restored or replaced by the Contractor to match existing pavements and base courses, at no additional expense to the Owner. Existing pavements to remain shall be protected by the Contractor.

G. The Contractor shall be responsible for keeping all excavated and construction material a safe distance back from the edge of excavations to avoid overloading the sides of excavations and to prevent slides or cave-ins.

H. If a pipe is to be placed in fill or the top of the pipe is within two (2) feet of existing ground surface, the fill shall first be placed as specified herein to a height of not less than two (2) feet over the top of the pipe and for a width of five (5) feet beyond each side of the pipeline. Following placement of such fill, excavation and backfill shall proceed as specified herein.

I. No excessive trench widths shall be allowed to avoid the use of the trench box. The trench width at and below a level one (1) foot above the top of the pipe shall not exceed the limits indicated on the Contract Drawings for the size pipe being installed, unless otherwise permitted by the Engineer.

J. Where existing subsurface utilities or other facilities adjacent to or crossing through the excavation require temporary support or protection, such temporary support or protection shall be satisfactorily provided by the Contractor, at no additional expense to the Owner. All necessary measures shall be taken by the Contractor to prevent lateral movement or settlement of existing facilities or of work in progress.

K. Grading shall be done as necessary to prevent surface water from flowing into excavations and any water accumulating therein shall be removed by pumping or other approved method. The pipelines shall not, at any time, be used for trench drainage.

M. The Contractor shall strictly adhere to all federal, state and local regulations regarding safety during the performance of this Work, including OSHA's *Construction Standards for Excavations,* 29 CFR, Part 1926.

3.4 UNSUITABLE MATERIALS

A. Unsuitable materials are herein defined as organic material, peat, organic silt or combinations thereof, all having unsuitable in-situ bearing properties and all materials of whatever description which are too loose or saturated for use as backfill to provide satisfactory bearing.

B. If unsuitable material is encountered at the depths indicated on the drawings for bottom limit of excavation, the Contractor shall immediately notify the Engineer and shall not proceed further until instructions are given.

C. The Contractor shall satisfactorily excavate and remove all unsuitable material to·lines, grades and limits indicated on the drawings or as directed in writing by the Engineer and shall satisfactorily dispose of such material off the Site.

D. All resulting below-grade excavations shall be refilled with compacted engineered fill which is defined in Section 02300 Earthwork.

3.5 DISPOSAL OF EXCAVATED MATERIAL

A. All excavated earth materials approved by the Engineer as suitable for reuse, shall be used for backfilling excavations, and for rough grading as necessary for the completion of the Work.

B. All other excavated materials not required or approved for backfill and fill, all surplus material, all rock, boulders and pavement resulting from the excavations, shall be removed and satisfactorily disposed of off the site by the Contractor at a location, by a method, and along a route subject to Owner approval and at no additional expense to the Owner. Disposal by burning or burying on the site shall not be permitted. The Contractor is responsible for locating and providing the approved disposal site.

3.6 BACKFILLING

A. Unless directed otherwise by the Engineer, excavations shall not be backfilled until all required pipeline tests have been satisfactorily performed and until the work as installed conforms to all requirements specified in these Specifications. Each layer of backfill material shall be moistened, if required, and compacted

in such manner as to permit the proper and desired compaction of the backfill, so that paving of excavated areas can proceed immediately after backfilling is completed. Water shall be provided by Contractor, if required for backfilling, by tanker truck at no additional cost to the Owner.

B. All excavations shall be backfilled as soon as practicable with approved excavated material. If suitable material as approved by the Engineer is not available from the excavations in the quantities required for proper backfilling of excavations, the Contractor shall provide the necessary approved earth borrow for backfilling from off- site sources. Excavated materials too wet for backfill shall be stockpiled in an approved manner to sufficiently dry prior to being used for backfill as directed by the Engineer.

C. All backfill placed in trenches below a level 12 inches above the top of pipe shall consist of compacted engineered fill, as shown on the plans, placed in layers not exceeding four (4) inches in loose depths. Bedding shall be as shown on the Contract Drawings and as specified herein. Selected backfill shall be select compactable, as approved by the Engineer. The material shall be deposited uniformly on both sides of the pipe and shall be thoroughly compacted by tamping under and on each side of the pipe to provide uniform support around the pipe, free from voids. Compaction of each layer shall be 95 percent of maximum dry density as determined by ASTM Designation D1557.

D. A utility warning tape shall be placed above the crown of the new pipe along the entire length of the pipe. Reference is made to Section 02300 Earthwork for colors and widths of the tape.

E. Each layer shall be compacted to 95 percent of maximum dry density as determined by ASTM Designation D1557. The moisture content of backfill shall be such that proper compaction shall be obtained. Puddling of backfill with water shall not be permitted. During construction, periodic tests at the expense of the Owner shall be made by personnel of a testing laboratory satisfactory to the Engineer to insure that the required compaction is being obtained.

F. During filling and backfilling operations, pipelines shall be checked by the Engineer to determine whether any displacement of the pipe has occurred. If the inspection of the pipelines shows poor alignment, displaced pipe or any other defects, the defects designated by the Engineer shall be remedied in a satisfactory manner by the Contractor at no additional expense to the Owner.

G. Backfilling against masonry or concrete shall only be done when approved. Symmetrical backfill loading adjacent to structures shall be maintained. During backfilling and compacting operations, care shall be exercised so that equipment used shall not overload the structures. Backfill adjacent to structures shall be placed in layers not more than nine (9) inches

in loose depth and each layer thoroughly compacted with at least four (4) passes of an approved plate-type vibratory compactor.

H. After backfilling trenches, the Contractor shall maintain the filled surfaces in good condition, with a smooth surface level with adjacent undisturbed surfaces. Any subsequent settling shall be immediately repaired by the Contractor in a manner satisfactory to the Owner and such maintenance shall be provided by the Contractor for the remainder of this contract, at no additional expense to the Owner.

I. The finished surfaces of filled excavations shall be compacted, and reasonably smooth and free from surface irregularities. Subgrade upon which either topsoil or pavements is to be placed shall be maintained in a satisfactory condition until the finish courses are placed. The storage or stockpiling of materials on finished subgrade shall not be permitted.

J. After the subgrade has been shaped to line, grade and cross-section, the top six (6) inches shall be thoroughly compacted to 95 percent of maximum dry density. This operation shall include any required reshaping and wetting to obtain proper compaction. All soft or otherwise unsuitable material shall be removed and replaced with suitable material from excavation or earth borrow, as approved by the Engineer. The resulting area and all other low sections, holes or depressions shall be brought to the required grade with material approved by the Engineer and the entire subgrade shaped to line, grade and cross-section, and thoroughly compacted.

K. The Contractor's attention is directed to the fact that unsuitable materials such as organic material, peat, silt or combinations thereof, having unsuitable bearing properties may be encountered at the depths indicated for excavations; if, as the work progresses, unsuitable material is encountered at and below the depths indicated for excavation, notify the Engineer immediately and do not proceed further until instructions are given. Sheeting shall be driven a minimum of two (2) feet below the bottom of unsuitable material prior to its removal. Excavate and remove the unsuitable material in accordance with the applicable requirements specified herein, to the lines, grades and limits directed by the Engineer and satisfactorily dispose of the excavated material off the site. The resulting excavations shall be refilled to the grades established for the underside of the bedding for the pipe, as directed with thoroughly compacted engineered fill.

PART 4 -METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

No separate measurement shall be made for the Work covered under this Section. All costs in connection therewith shall be included for payment under other applicable bid items of this Work

4.2 BASIS OF PAYMENT

No separate payment shall be made for the Work covered under this Section. All costs in connection therewith shall be included for payment under other applicable bid items of this Work

END OF SECTION

SECTION 02513

BITUMINOUS ASPHALT PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including all Division 1 Specifications - General Requirements apply to the work in this section.

1.02 DESCRIPTION OF WORK

A. Pavement shall be replaced within the limit of work lines shown on drawings.

B. Pavement shall consist of temporary pavement repairs (1½-inch) followed by a permanent pavement repair (1½-inch binder and 1½-inch top course) to be placed after a 90 days waiting period.

C. If required, Cape Cod style berm to be placed monolithically with top wearing course.

1.03 SUBMITTALS

Provide copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.04 JOB CONDITIONS

A. Weather Limitations:

1. Apply prime and tack coats when ambient temperature is above 50 degrees F (10 degrees C), and when temperature has not been below 35 degrees F (1 degree C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

2. Construct asphalt concrete surface course when atmospheric temperature is above 40 degrees F (4 degrees C) and when base is dry. Base course may be placed when air temperature is above 30 degrees F (-1 degree C) and rising.

B. Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Use locally available materials and gradations which exhibit a satisfactory record of previous installations.

B. The following standards form a part of these specifications and indicate the minimum standards required:

Commonwealth of Massachusetts Massachusetts Highway Department Standard Specifications for Highway and Bridges (MHD)

MHD 405	Gravel Base Course
MHD 420	Class I Bituminous Concrete Base Course, Type I-1
MHD 460	Class I Bituminous Concrete Pavement
MHD 476	Cement Concrete Pavement
MHD 860	Reflectorized Pavement Markings

2.02 ASPHALT-AGGREGATE MIXTURE

A. Pavement shall consist of binder course and top course or surface treatment pavements as specified herein. The bituminous paving mixture, equipment, methods of mixing and placing, and the precautions to be observed as to weather, condition of base, etc., shall be in accordance with MHD 460. The bituminous concrete pavements shall consist of Class I Bituminous Concrete, Type 1-1.

B. The binder course mixture shall be within the composition limits of binder course as shown in MHD M3.11.03, and shall be 1-1/2 inches thick.

C. The top course or surface treatment pavement shall be within the composition limits as shown in MHD M3.11.03, and shall be placed as shown on the drawings or as specified.

D. The top course pavement shall be 1-1/2 inches thick in local streets.

2.03 BITUMINOUS CONCRETE CURBING

Bituminous concrete curbing shall be Class I conforming to Subsection M3.11.03, Table A of the Massachusetts Highway Department Standard Specifications for Highways and Bridges, 1988, and all subsequent supplemental specifications.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

A. Proof roll prepared subbase surface to check for unstable areas and areas requiring additional compaction.

B. Notify Contractor of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.

C. Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturer's recommended dosages and application instructions. Apply to compacted, dry subbase prior to application of prime coat.

D. Prime Coat: Apply at rate of 0.20 to 0.50 gal. per sq. yd., over compacted subgrade. Apply material to penetrate and seal, but not flood surface. Cure and dry as long as necessary to attain penetration and evaporation of volatiles and per manufacturer's instructions.

E. Tack Coat: Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into asphalt concrete pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface. Allow to dry until at proper condition to receive paving. Apply per manufacturer's instructions.

3.02 PLACING MIX

A. General: Place asphalt concrete mixture on prepared surface, spread and strike-off. Spread mixture at minimum temperature of 225 degrees F (107 degrees C).

B. Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

C. Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

D. Surface treatment pavement over trenches shall be feathered to meet existing paved surfaces.

3.03 ROLLING

A. General: Begin rolling when mixture will bear roller weight without excessive displacement.

B. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

C. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

D. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

E. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

F. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut-out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.04 BITUMINOUS CONCRETE CURBING

A. Bituminous concrete curb, unless modified herein, installation shall conform to Section 501.62 of the MHD Standard Specifications for Highways and Bridges, 1988.

B. Where indicated on the plans, or directed, drainage openings shall be made through the curbing at the elevations and of the size required.

3.05 FIELD QUALITY CONTROL

A. General: Test in-place asphalt concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Engineer.

B. Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:

1. Base Course: 1/2”, plus or minus.

2. Surface Course: 1/4”, plus or minus.

C. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using 10’ straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.

1. Base Course Surface: 1/4”.

2. Wearing Course Surface: 3/16".

D. Check surface areas at intervals as directed by Engineer.

PART 4 -METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Bid Item No.	Description	Unit of Measurement

23	HMA Intermediate Course (19 mm)	Ton
24	HMA Surface Course (12.5 mm)	Ton
25	Temporary HMA for Miscellaneous Work and Patching	Ton
49	Tack Coat	Square Yards
50	Hot Pour Rubberized Asphalt Sealer	Linear Feet
67	6-inch Permanent Reflectorized Pavement Marking White Line (Painted)	Linear Feet
68	6-inch Permanent Reflectorized Pavement Marking Yellow Lines (Painted)	Linear Feet

4.1 METHOD OF MEASUREMENT

The bid items listed above shall be measured by the units indicated, units shall include all materials, labor, equipment and appurtenant work associated with completing the work in place and accepted by the Owner and Engineer.

4.2 BASIS OF PAYMENT

The bid items listed above shall be paid by the units indicated, which payment will constitute full compensation for all plant, materials, labor, equipment and appurtenant work associated with providing temporary traffic controls and accepted by the Owner and Engineer.

END OF SECTION

SECTION 02523

BITUMINOUS CONCRETE SIDEWALK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

This item of work shall consist of furnishing and setting bituminous concrete sidewalk on a prepared subbase, in accordance with these specifications and in close conformity with the lines and grades shown on the plans or established by the Engineer.

1.02 RELATED DOCUMENTS

Required earthwork is specified under Section 02200 - Earthwork.
Asphalt Paving under Section 02513

1.03 SUBMITTALS

Six (6) sets of shop drawings for the materials of this section, dimensioning typical sidewalk area shall be submitted to the Engineer for review.

PART 2 - PRODUCTS

Bituminous concrete sidewalk shall be Class I conforming to Subsection M3.11.03, Table A of the Massachusetts Highway Department Standard Specifications for Highways and Bridges, 1988.

PART 3 - EXECUTION

Bituminous concrete sidewalk, unless modified herein, installation shall conform to Section 701.62 of the MHD Standard Specifications for Highways and Bridges, 1988.

END OF SECTION

SECTION 02940

TREE PLANTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to install large mature trees in landscaped areas as shown and as directed.

1.02 DESCRIPTION OF WORK

A. Extent of work is shown on Drawings.

B. Excavation, filling and grading required to establish elevations shown on Drawings are not specified in this section. Refer to earthwork sections.

1.02 SUBMITTALS

Submit to the Engineer product data and samples for plant material.

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods required for proper completion of the work under this Section.

B. Use equipment of adequate size, capacity, and quantity to accomplish the work of this Section in a timely manner.

C. Comply with the directions of the Engineer and the requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.01 TREES

A. Trees shall be delivered to the site in good condition free of signs of disease, malnourishment and poor maintenance.

B. Trees shall be delivered as a 10’ to 12’ high, minimum 6” caliper specimen and shall consist of the species identified on the plan.

PART 3 EXECUTION

3.01 LARGE MATURE TREE INSTALLATIONS

A. Trees shall be planted when the weather conditions are approved as suitable, in the periods between April 1 and May 30 or August 15 to October 1, unless otherwise approved.

B. Trees shall be planted in the locations as shown on the Drawings and as designated by the Engineer on a calm day by hand.

C. Plant trees according to details as shown in the drawings and as specified herein.

D. Remove all twine, wire and burlap from the top 2/3 of tree earth balls. Remove all non-biodegradable material such as plastic or nylon completely.

E. The Contractor shall employ all possible means to preserve the trees in a healthy growing condition. The plant establishment period shall be one year following planting. Care during establishment period includes watering, cultivating, pruning, weeding and repair.

F. The Contractor shall replace all tree filter trees that have not shown evidence of at least 50% healthy growth. All dead and unhealthy trees shall be replaced in kind and size with plants as originally specified, or on approval by the Engineer.

3.02 FINAL INSPECTION AND ACCEPTANCE:

A. The Engineer, at the Contractor's expense, reserves the right to have a manufacturer's representative inspect the installation process at any time during construction.

B. Any work found to be unsatisfactory by the manufacturer's representative shall be corrected at the Contractor's expense.

END OF SECTION

SECTION 03251

CONCRETE JOINT CONSTRUCTION

PART 1 GENERAL REQUIREMENTS

1.1 SECTION INCLUDES

A. Construction Joints.

B. Waterstops and Joint Sealants.

1.2 RELATED WORK

A. Section 03300, Cast In Place Concrete

1.3 REFERENCE DOCUMENTS

A. CRD C-572 - U.S. Army Corps of Engineers Specification for Waterstops.

B. ASTM C920 - Elastomeric Joint Sealants.

C. ASTM D5249 - Backer Material for Use With Cold and Hot Applied Joint Sealants in Portland Cement Concrete and Asphalt Joints.

1.4 QUALITY ASSURANCE

A. Provide at least one person who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the design and application of work described for this Section, and who shall be present at all times during progress of the work and shall direct all work performed under this Section.

B. In the event of damage immediately make all repairs and replacements necessary to the approval of the Inspector and at no additional cost to the Owner.

C. Sealants whose shelf life has expired shall be removed from the site.

1.5 INSPECTION AND TESTING

A. The Owner will engage and pay for the services of an independent testing laboratory to perform inspections, tests and sampling at the job site.

B. All concrete work shall be inspected according to the Statement of Special Inspections for Concrete Construction.

1.6 SUBMITTALS

A. Submit manufacturer's certificate of conformance for Materials covered in Part 2.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Use all means necessary to protect materials before, during and after installation and to protect the installed work and materials of all other trades.

B. Sealants shall be delivered in the manufacturer's original unopened containers.

PART 2 PRODUCTS

2.1 JOINT SEALANTS

A. Two part, non-sag polysulfide based, synthetic rubber sealant meeting ASTM C920, Type M, Grade NS, Class 25, Use, NT, M, G, A with the exception of ASTM C510, "Stain and Color Change". Exceed the test requirements of ASTM C1247 for sealants exposed to continuous immersion in liquids and NSF Standards 61, Section 6 for joining and sealing materials. Pecora Synthacalk GC-2+, PSI-350 by Polymeric systems, or approved equal.

2.2 BACKER RODS

A. ASTM D5249.

2.3 WATERSTOPS

A. Virgin Polyvinylchloride (PVC) compound shall not contain any scrap or reclaimed material or pigment. Flat-Ribbed 6"x3/8" conforming to Corps of Engineers Specification CRD-C 572.

1. Minimum Tensile Strength (ASTM D-412) 2000 psi
2. Minimum Ultimate Elongation (ASTM D-412) 300 %
3. Low Temperature Brittleness (ASTM D-746) -20°F
4. Minimum Head Resistance 65 Ft.

B. Field splices shall be tested by use of a corona discharge unit.

C. Zero water leakage shall be tested per the ACI Standard Test Method for Waterstops.

2.4 OTHER MATERJALS

A. All other materials, not specifically described but required for a complete and proper installation of joint filler, shall be as selected by the Contractor subject to the approval of the Engineer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Prior to all work of this Section, carefully inspect the installed work of all trades and verify that all such work is complete to the point where this installation may properly 'commence

B. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

C. By beginning Work, contractor accepts conditions and assumes responsibility for correcting unsuitable conditions.

3.2 WATERSTOPS

A. Provide waterstops at locations indicated on the drawings.

B. The waterstop shall provide a continuous watertight diaphragm. Extend the entire length of the joint and position as shown in the typical details.

C. Fasten the waterstop to formwork or reinforcing steel at 12 inch maximum spacing, both sides, to ensure alignment.

D. Make butt splices developing water tightness fully equal to that of continuous waterstop material. Cut ends to be spliced with a miter guide and power saw. Fuse all field splices with a thermal splicing unit designed for that specific purpose.

3.3 CONSTRUCTION JOINTS

A. Provide construction joints and install waterstops and joint sealant as shown in the typical details.

B. Location of all construction joints shall be approved by the Engineer. Locate joints as follows:

1. In elevated slabs and beams, locate joints near the mid-span unless a beam intersects a girder at this point, in which case, offset joint a distance equal to twice the width of the beam.

2. In walls, locate joints at underside of floors, slabs, beams, at tops of footings and floor slabs.

C. Continue reinforcement across joints.

D. Thoroughly clean joint surface and remove laitance. Prior to placing adjoining concrete, dampen, but do not saturate, hardened surface.

E. Thoroughly consolidate concrete in the vicinity of the joint.

PART 4 -METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.01 METHOD OF MEASUREMENT

No separate measurement shall be made for the work covered under this Section. All costs in connection therewith shall be included for payment under other applicable bid items of this Work.

4.02 BASIS OF PAYMENT

No separate payment shall be made for the work covered under this Section. All costs in connection therewith shall be included for payment under other applicable bid items of this Work.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL REQUIREMENTS

1.1 SECTION INCLUDES

A. Cast-in-place concrete.

B. Formwork, shoring, and bracing.

C. Conveying.

D. Curing, finishing, and protection.

E. Mix Design, Material Testing and Certification.

F. Reinforcing, anchorage, embedded items, accessories.

G. Shop drawings.

H. Repair of defective areas.

I. Cleaning and removal of surplus material and waste.

1.2 RELATED WORK

A. Section 03251, Concrete Joint Construction.

B. Section 02200, Earthwork.

C. Section 02221, Trench Excavation and Backfill.

1.3 REFERENCES

A. ACI 117 -Standard Tolerances for Concrete Construction and Materials.

B. ACI 301 - Specifications for Structural Concrete for Buildings.

C. ACI 302.lR - Guide for Concrete Floor and Slab Construction

D. ASTM C94 - Standard Specification for Ready-Mixed Concrete.

E. OSHA 29CFR1926 - Concrete and Masonry Safety Standards, Subpart Q.

F. ASTM C33 - Standard Specification for Concrete Aggregates.

G. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

H. ACI 305 - Hot Weather Concreting.

I. ACI 306.l - Standard Specification for Cold Weather Concreting.

J. ACI 308 - Standard Practice for Curing Concrete.

K. ACI 309 - Standard Practice for Consolidation of Concrete.

L. ACI 311 - Recommended Practice for Concrete Inspection.

M. ACI SP-66 Details and Detailing of Concrete Reinforcing.

N. ACI 318 - Building Code Requirements for Reinforced Concrete.

0. ACI 347 - Recommended Practice for Concrete Formwork.

P. AWS D1.4 - Reinforcing Steel Welding Code.

Q. ASTM A615 - Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcing.

R. PCA SP021A - Color and Texture in Architectural Concrete.

1.4 QUALITY ASSURANCE

A. The Manufacturer shall be certified by the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.

B. The Testing Agency shall be qualified according to ASTM C1077 and ASTM E329 to conduct the testing indicated, as documented according to ASTM E548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. Perform concrete work in conformance with ACI 301, except as modified herein or on the Drawings. The Contractor shall maintain a copy of ACI 301 in the project field office at all times.

D. Place concrete according to ACI 304 only after mix designs and reinforcing submittals have been approved by the Engineer and the approved submittals are at the job site and the batch plant.

E. Concrete mixes that utilize fly ash or granulated slag require special attention to curing methods, and extended curing times. The curing time requirements govern over those listed in ACI 308, and shall be strictly observed. The contractor shall schedule the WL so as to permit the full curing period specified for each individual concrete placement. The work schedule shall accommodate the additional time needed for required curing by not permitting any surface to be compromised, or exposed to drying conditions, for the convenience of preparation of adjoining concrete placements. Additional requirements on form stripping, are delineated herein.

F. Provide batch ticket to the Inspector written in ink with each batch delivered as specified in ASTM C94 including:

1. Load Number and cubic yards of delivery;
2. Compressive strength and amount of cement;
3. Time truck is charged with cement;
4. Admixture ingredients;
5. Aggregate sizes and weights;
6. Signature of ready-mix representative.

G. Detail reinforcing according to ACI SP-66, ACI Detailing Manual.

H. Modify or replace concrete not conforming to the required line, strength, finish detail or elevations within specified tolerances. Acceptance shall follow Chapter 18 of ACI 301.

I. Surfaces shall be smooth and free from aggregate pockets and honeycomb.

J. Repair concrete with excessive honeycombing, blistering, or other defect as determined and as directed by the Inspector and at no cost to the Owner, according to Chapter 9 of ACI 301.

1.5 INSPECTION AND TESTING

A. A testing agency shall design concrete mixes, to test conformity of materials to this Specification. All costs for concrete mix design to be paid for by the Contractor.

B. The Owner will engage and pay for the services of an independent testing laboratory to perform inspections, tests and sampling at the job site.

C. All cast in place concrete work shall be inspected according to the Statement of Special Inspections for Cast in Place Concrete Construction

D. All cast-in-place concrete shall have the air content verified prior to placement.

E. Prior to placing of footings, the subgrade shall be approved by the Inspector.

F. All inserts, anchors, sleeves, and embedded parts shall be inspected and approved.

G. Testing agency is neither authorized to change any requirement of the specifications, nor to approve any portion of the work.

1.6 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Testing Agency Certifications.

C. Submit manufacturer's certificate of conformance for Materials covered in Part 2.

D. Concrete Mix Design: The testing agency shall design Concrete Mixes according to Paragraph 5.3 of ASTM C94, Alternative No. 2, and ACI 318, Section 4.3, Proportioning On the Basis of Field Experience and/or Trial Mixtures. Indicate amount of water to be withheld for later addition at the project site. Do not commence concrete work until submittals are approved. Submit separate mixes for:

1. Each class of concrete.

2. Concrete to be pumped. Refer to Part 2 of this Section.

E. Compressive Strength: Submit only for the concrete strengths called out on the Structural Drawings. Include test results and standard deviation analysis achieved by the concrete plant or trial mixture test data, as per Section 3.9 of ACI 301.

F. Cement, Fly Ash and Granulated Slag: For each shipment to the batch plant, furnish certified copies of mill test reports to the Inspector prior to incorporation into the work.

G. Submit catalog cuts for any pre-mix bags of concrete proposed for concrete patching and repair and miscellaneous uses.

H. Aggregates: Include fineness modulus, specific gravity, dry rodded unit weight, and sieve analysis. Submit samples of aggregate for laboratory testing and trial mixes. Samples shall be in the quantity (and volume) as ordered by the Owner and shall be delivered in watertight containers with contents fully identified. Testing costs will be paid by the Owner.

I. Admixtures: Submit manufacturer's certificate of conformance, including chloride ion content.

J. Pigments for coloring concrete. Submit pigment manufacturer's color chart or sample chip set for color selection; indicate pigment number and required dosage rate.

K. Reinforcing Steel: For each steel shipment, submit one certified copy of a mill test report indicating physical and chemical analysis.

L. Shop Drawings: Show bar materials, locations, sizes, quantities, bending and cutting schedules, splicing, and supporting and spacing devices. Placing and bending details shall meet ACI 315. Bar sizes, splices and splice lengths shall be clearly shown on the submittals. Do not use schedules to call out rebars. Engineer's drawings may not be reproduced in whole or in part as a shop drawing.

M. Formwork: Submit certification that Formwork has been designed according to all governing codes.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcing to prevent bending and damage.

1. Avoid damaging coatings on steel reinforcing.

2. Repair damaged epoxy coatings on steel reinforcing according to ASTM D 3963.

3. Pigments: Comply with manufacturer's instructions. Deliver pigments to job site or batch plant in original, unopened packaging. Store in dry conditions.

1.8 PRE-INSTALLATION MEETING

A. At least 35 days prior to submittal of the concrete design mixes, schedule and conduct a meeting to review detailed requirements for preparing concrete design mixes and to determine procedure for proper concrete construction.

B. Responsible representatives of all parties concerned with concrete work shall attend the meeting, including:

1. Contractor's Superintendent.

2. Laboratory responsible for the design mix.

3. Laboratory responsible for field quality control.

4. Concrete Trade Contractor.

5. Ready-Mix concrete producer.

6. Admixture manufacturers.

7. A/E and C/M.

C. *CIM* shall record minutes of meeting. Distribute minutes to all parties concerned within 5 days of meeting.

PART 2 PRODUCTS

2.1 FORM MATERIALS

A. All Materials: ACI 301 and ACI 347.

B. Plywood: PS-1, BB Grade, Class 1.

C. Lumber: Douglas Fir or Southern Pine, standard or construction grade, with grade stamp clearly visible.

D. Steel: Minimum 16 gage sheet, well matched, tight fitting.

E. Mixes which include fly ash or granulated slag require extended curing time. Forms shall be constructed of, and/or treated with coatings which will minimize absorption and/or transmission of water. This is especially applicable to edge forms for construction joints, and any other site-fabricated wooden form materials.

F. Form Ties:

1. Surfaces not exposed in the finished work: Snap-off with cone ends which will leave metal at least 1112 inches back from finished surface. Ties shall be adequate to withstand twice the computed lateral pressure from the concrete.

2. Surfaces exposed in the finished work: RJD Industries Inc., Fiberglass Form tie System, Super tie XV, 15,000 pound system, no substitutions.

G. Form Release Agent: Material which leaves no residue, does not stain concrete or impair natural bonding or color of coatings intended for use on concrete.

2.2 REINFORCING STEEL

A. Bar Material: ASTM A615, Grade 60 deformed billet steel bars, uncoated finish.

B. Mechanical Bar Splicers: Shall meet the specified minimum tensile strength of the reinforcing bar. For grade 60 rebar, splice strength=90 ksi. Cadweld T-Series by Erico, or Dowel-In by Richmond Screw Anchor Company.

2.3 CONCRETE MATERIALS

A. Cementitious Materials:

1. Cement: ASTM C150, Portland Type I, II or I/II.

2. Ground Granulated Blast-Furnace Slag: ASTM C989 Grade 100.

3. Fly Ash Pozzolan: ASTM C618 Class F. Loss on ignition not to exceed 4.0%.

B. Aggregates:

1. Fine Aggregate: ASTM C33. Natural washed sand, hard and durable particles.

2. Coarse Aggregate: ASTM C33. Crushed rock or washed gravel, Severity Class 38, Grading size No. 67. Gradation No. 56 57, or 467 may be used for *W?*- s and footings over 12 inches thick.

C. Water: Clean and free of deleterious amounts of acids, alkalis or organic materials.

2.4 ADMIXTURES

A. All admixtures shall be from one manufacturer or else the Ready Mix Concrete Producer shall certify compatibility.

B. Air Entraining Agent: ASTM C260.

C. Water Reducing Agent: ASTM C494, Type A.

D. Set Retarding Agent: ASTM C494, Type D.

E. Accelerating Agent: ASTM C494 Type C or E.

F. High Range Water Reducing Agent: ASTM C494, Type F or G.

G. Pigments for Integrally Colored Concrete to match or complement existing stone in spillway:

1. Pigments shall contain pure, concentrated mineral pigments especially processed for mixing into concrete and complying with ASTM C979.

2.5 CONCRETE MIX

A. Proportion Concrete according to ASTM C94, Chapter 11.

B. Provide Compressive Strength as shown on the Structural Drawings.

C. Slump: The working limit at the point of deposit shall be 4 inches, with a plus tolerance of one inch. The Inspector shall have the authority to reject concrete under either of the following two conditions.

1. The slump does not fall within the tolerance of the working limit; that is, the slump exceeds 5 inches.

2. If two consecutive truckloads exceed the working limit (4 inches), the second truckload may be rejected by the Inspector.

D. Air Content: Concrete exposed to freezing and thawing shall have an air content at point of discharge of 6.0%±1.5%. Floor slabs shall not be air entrained.

E. Concrete which is to be pumped shall either use the specified High Range Water Reducer or else satisfy the following:

1. Use a lubricating mortar prior to pumping.
2. Maximum nominal size of coarse aggregate is 3/4" inch.
3. Total weight of the coarse aggregate to be less than 1675 pounds per cubic yard.
4. Fine aggregate passing the #100 sieve to be between 5% and 10%.
5. Fine aggregate passing the #50 sieve to be between 15% and 30%.
6. Fine aggregate passing the #30 sieve to be between 35% and 60%.
7. Fine aggregate passing the #16 sieve to be between 60% and 85%. PART 3

EXECUTION

3.1 PREPARATION:

A. Notify the Inspector minimum 24 hours before start of concreting operations and before each pour.

B. Clean all inserts, anchors, sleeves, and embedded parts

C. Remove foreign matter and standing water from the forms.

D. Compact and moisten the subgrade.

E. Do not pour concrete on frozen soil.

F. Prior to placing concrete secure test cylinders and perform slump tests.

3.2 FORMWORK ERECTION

A. Formwork shall comply with ACI 347, and be used for all concrete work, including reinforced footings.

B. Verify lines, levels, and measurements before proceeding with formwork. Construct forms to the dimensions shown on the drawings. Align joints to prevent leakage.

C. Coordinate work of other sections in forming and setting openings, siots, recesses, chases, sleeves, bolts, anchors and other inserts.

D. The Contractor is responsible for the design and safe installation of forms and shores to safely support forces from placement and vibration of concrete, of sufficient rigidity to maintain finished tolerances of ACI 347.

E. Clean forms of any mortar from previous concreting operations and of any other foreign material.

F. Apply form coatings, sealers, and release agents according to manufacturer's printed instructions before placing reinforcing steel, anchoring devices and embedded items.

G. As close as practical before placement of concrete, modular form panels shall be wetted with approved form release compounds. Similarly, edge forms or other site-fabricated wooden formwork shall be thoroughly wetted with approved form release compound and/or water, so as to minimize absorption and/or transmission of water during curing time.

3.3 JOINT CONSTRUCTION

A. See Section 03251.

3.4 REINFORCING

A. Clean reinforcing of loose rust and mill scale, earth, ice, and other foreign materials.

B. Place bars as shown on the drawings according to the Concrete Reinforcing Steel Institute's "Manual of Standard Practice."

C. Tie reinforcing bars with 18 gage black annealed wire. Hold in place by specified spacers. Position, support, and secure reinforcing against displacement by forms and concrete placement operations.

D. Placing Tolerances: ACI 117, Paragraph 6.1.2.

E. Do not use bars with kinks or bends not shown on the drawings, or bars with reduced cross sections. Do not bend or straighten bars unless approved by the Inspector. The minimum cold bend radius is 4 inches.

F. All welding of reinforcing bars shall comply with ANSI/AWS D1.4.

3.5 MIXING AND CONVEYING

A. Mix and Deliver ready mixed concrete according to ASTM C-94. The supplier shall maintain records for each pour, including date, location, quantity, air temperature, test samples and mix proportions.

B. Mix concrete until there is a uniform distribution of materials and discharge

completely before recharging mixer.

C. Upon approval of the Inspector, water may be added to the mix on arrival at the job site only when the slump is within specification. The specified slump and water cement ratio shall be maintained. Reference ACI 301, Article 7.5.2.

D. Convey concrete from the mixer to the forms by methods which will prevent separation or loss of material. Do not drop concrete freely over spacers, reinforcing or embedded items. Use drop chutes or trunks.

E. All equipment for conveying concrete shall be of size and design as to ensure a practically continuous flow of concrete at delivery and without separation of material.

3.6 CONCRETE PLACING

A. Place concrete according to ACI 304.

B. No more than 90 minutes shall elapse between the time water is added to the mix and the concrete is poured.

C. If the concrete temperature exceeds 90°F during the pouring period, no more than 45 minutes shall elapse between the time water is added to the mix and the concrete is poured, except concrete containing the specified High Range Water Reducer.

D. If the daily ambient temperature is under 40°F during the 7 day curing period, provide cold weather protection according to ACI 306.1.

E. If the ambient temperature exceeds 90°F during the 7 day curing period, provide protection according to ACI 305. The as-placed concrete shall not exceed 85°F, except concrete containing the specified High Range Water Reducer.

F. Deposit concrete in horizontal layers not deeper than 24 inches. Avoid inclined construction joints . Place each layer while the underlying layer is responsive to vibration, and integrate the layers by proper vibration.

G. Thoroughly vibrate concrete into place around reinforcing and into comers of formwork according to ACI 309.

H. For concrete with epoxy coated reinforcing , use vibrators with coated heads.

I. Do not apply vibrators to steel which extends into partially hardened concrete.

3.7 FORM REMOVAL

A. No formwork may be loosened or stripped, until the prescribed extended curing time has been met, unless additional curing measures have been taken, to the

satisfaction of the Engineer.

1. This curing requirement is applicable to all surfaces, including edge forms.
2. The curing measures shall include provisions to ensure that all surfaces are continuously wetted liberally, both during work hours and non-work hours.
3. Curing measures shall include means to prevent drying from wind currents, and shall be adequately fastened to prevent wind uplift at overlaps, comers and edges, and subsequent exposure and/or premature drying of the new concrete.
4. Additional consideration shall be given to freezing of curing water, during cold weather conditions.

B. Upon form removal, there shall be no excessive deflection of deformation and no evidence of damage to the concrete.

C. Do not remove forms until concrete has gained sufficient strength to support its own weight and any other loads to which it might be subjected.

D. As a minimum, do not remove forms until the concrete has been exposed to an ambient temperature above 50°F for the following cumulative period of time:

1. Vertical forms for walls 12 hours
2. Horizontal forms for beams under 10 foot span 4 hours
3. Horizontal forms for floor and roof slabs 4 hours

E. When the ambient temperature remains below 50°F, the required set periods will be determined by the engineer.

3.8 FINISHING FORMED SURFACES

A. Provide a Rough-Formed Finish to all surfaces not exposed to public view. Leave surface with the texture imparted by forms, except patch tie holes and defects. Remove fins exceeding 14 inch in height.

B. Smooth-Formed Finish: Apply to concrete surfaces exposed to public view.

1. Provide as-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.
2. Repair and patch tie holes and defective areas.
3. Remove fins and other projections exceeding 1/8 inch in height.

3.9 CURING

A. Cure concrete according to ACI 308 for 7 days, minimum. It is not permissible to

reduce the curing time based on the concrete reaching 70% of the specified compressive strength.

B. Prevent moisture loss during the period from 3 or 4 hours to 10 hours after placement.

C. Formed Concrete: Wood forms left in place during the curing period shall be kept continuously wet. If forms are removed before the end of the curing period, provide some other approved form of curing.

D. Slab: Cure the slab according to ACI 308 for 7 days, minimum.

1. It is not permissible to reduce the curing time based on the concrete reaching 70% of the specified compressive strength.

2. Ensure that the surface remains covered by free water up until the time of setting.

3. It is not permissible to dust the concrete surface with cement or sand to accelerate curing.

E. For slabs cured with curing compounds:

1. Do not apply curing compound until surface has ceased to bleed.

2. Do not allow the surface to dry prior to application.

3. Apply the specified curing compound immediately upon the disappearance of surface water sheen at a thickness to assure compliance with ASTM C309.

PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Bid Item No.	Description	Unit of Measurement
80 (Bid Alternate)	Concrete Wall including Gatehouse Extension Walls and Pedestrian Bridge Foundation	Cubic Yard
81 (Bid Alternate)	Concrete Mats including Gatehouse Valve Chamber Floor and Pedestrian Bridge Foundation	Cubic Yard
82 (Bid Alternate)	Reinforcing	Pound
90 (Bid Alternate)	Valve Replacement Concrete (In the Dry)	Lump Sum

4.1 METHOD OF MEASUREMENT

The bid items listed above shall be measured by the units indicated, units shall include all materials, labor, equipment and appurtenant work associated with completing the work in place and accepted by the Owner and Engineer.

4.2 BASIS OF PAYMENT

The bid items listed above shall be paid by the units indicated, which payment will constitute full compensation for all plant, materials, labor, equipment and appurtenant work associated with completing the work in place and accepted by the Owner and Engineer. Payment for a commercial diver will not be made separately but shall be incorporated in the appropriate bid items of the Contract.

END OF SECTION

Structural

Technical Specifications

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 01 25 00 “Substitution Procedures” for requests for substitutions.

2. Section 01 72 00 “Closeout Procedures” for submittal of project warranties.

1.03 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.04 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Requests for consideration of comparable products will only be entertained during bidding.

2. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.

3. Architect/Engineer's Action: If necessary, Architect/Engineer will request additional information or documentation for evaluation of a comparable product request. Architect/Engineer will notify Contractor of approval or rejection of proposed comparable product.

   a. Form of Approval: Written Addendum.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01 33 00 "Submittal Procedures." Show compliance with requirements.

1.05 QUALITY ASSURANCE

A. Compatibility of options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents, but must be provided by the Contractor.

B. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturers or producer’s nameplates or trademarks on exposed surfaces of products which will be exposed to view in occupied spaces or on the exterior.

D. Labels: Locate required product labels and stamps on a concealed Surface or, where required for observation after installation, on an accessible surface that is not conspicuous.

E. Equipment Nameplates: Provide a permanent nameplate on each item of service connected or power operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.

1. Names of product and manufacturer.

2. Model and serial number.

3. Capacity.

4. Speed.

5. Ratings.

6. Power characteristics (if applicable).

7. UL label or compliance (if applicable).

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.

2. Store materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

6. Protect stored products from damage and liquids from freezing.

1.07 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and

limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents. Such disclaimers and limitations do not relieve warranty requirements on Work that incorporates product nor do they relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the Contractor.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time and Form: Comply with requirements in Section 01 77 00 “Closeout Procedures.”

D. Warranty Requirements:

1. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

2. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

3. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

4. Owner's Recourse:

b. Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

c. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

d. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

PART 2 – PRODUCTS

2.01 PRODUCT SELECTION PROCEDURE

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged, are asbestos free, and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect/Engineer will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product and provide only products previously approved during bid phase by written Addendum. The determination of equivalence is at the sole discretion of the Architect/Engineer who has no obligation to prove non-equivalence.

7. Mechanical and electrical equipment design and their space requirements are based on the first named item of the Section in which specified or that scheduled on the Drawings. If other than the first named or scheduled item listed for use is selected, modification to other elements of Work may be required. Show all such modification on shop drawings and submittals as appropriate. The cost of such modifications is solely the responsibility of the Contractor.

8. Where manufacturers are listed as acceptable for specific proprietary products but precise identification by model, series, or trade name is not specified, submit detailed product information for such products for Architect/Engineer's acceptance prior to ordering. Include specific requirements for modifications to other construction,

including but not limited to, power and utility requirements, characteristics, capacities, size and locations. The cost of such modifications is solely the responsibility of the Contractor.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

3. Products:

   e. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

4. Manufacturers:

   f. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. If proposing a comparable product by another manufacturer, whether named or not, provide a custom product if manufacturer’s standard product does not include salient features of the Basis-of-Design product indicated. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

6. Contractor’s Option: Where materials, products, systems or methods are specified to be selected from a list of options, subject to compliance with requirements, the choice of which material, method, product or system will be solely at the Contractor’s discretions. There will be no change in Contract Sum or Time because of such choice.

C. Visual Matching Specification: Where Specifications require "match Architect/Engineer's sample", provide a product that complies with requirements and matches Architect/Engineer's sample. Architect/Engineer's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect/Engineer from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect/Engineer will select color, gloss, pattern, density, or texture from manufacturer's

2.02 COMPARABLE PRODUCTS

A. Conditions for Consideration: Prior to bid, Architect/Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect/Engineer will reject request:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

5. Samples, if requested.

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 05 12 00

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.01 SUMMARY

A. Fabrication and installation of structural steel members and connections.

1.02 RELATED SECTIONS

A. Section 05 12 50 AESS

1.03 REFERENCES

A. Comply with the following standard material specifications:

a. AISC - Code of Standard Practice - Manual of Steel Construction - Allowable Stress Design (ASD)

b. ASTM A992 - Structural Steel

c. ASTM A36 – Steel Angles and Plates

d. ASTM A123 - Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products.

e. ASTM A276, Type 304 – Stainless Steel Structural Shapes and Threaded Round Bar Stock.

f. ASTM A240, Type 304 – Stainless Steel Plate Stock.

g. ASTM A563 - Carbon and Alloy Steel Nuts

h. AWS A2.4 - Symbols for Welding, Brazing, and Nondestructive Examination.

i. AWS D1.1 - Structural Welding Code.

j. ASTM A325 – High Strength Bolts

1.04 SUBMITTALS

A. Submit the following items to the Architect for review:

1. Shop Drawings of all fabrications showing field verified dimensions, locations, and connections to be made in the field.

2. Product literature for standard manufactured products and/or mass-produced items to be used

3. Mill test certificates for all tension rod materials and cast steel items indicating yield stress and ultimate failure stress of supplied materials.

1.05 QUALITY ASSURANCE

A. Comply with all referenced standards for the products employed.

B. Coordinate times of Architects and Engineer's Special On-Site Inspections.

PART 2 – PRODUCTS

2.01 STRUCTURAL STEEL MATERIALS AND FABRICATIONS

A. Structural steel shall conform to "Specifications for Structural Steel Buildings" (AISC ASD 1989).

B. Structural steel shapes and plates shall conform with the following:

1. Rolled shapes: ASTM A992, Grade 50

2. Plates, rods and bars: ASTM A36

3. Pipe: ASTM A53, Grade B

4. Cast fittings: Available steel material to be submitted and approved by the Architect. Minimum properties shall meet or exceed those of ASTM A36.

5. Structural tubing (HSS): ASTM A500, Grade B.

6. Bolts, nuts, and washers: ASTM A325 bolts, ASTM A563 nuts, Type 304 stainless steel for outdoor applications.

C. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing a minimum compressive strength of 7,000 psi at 28 days.

D. Touch-up primer for galvanized surfaces: SSPC 20 Type I Inorganic or Type II inorganic

E. All structural steel fabrications exposed to weather including lintels in exterior walls shall be hot dip galvanized in accordance with ASTM A123.

F. All non-stainless, non-galvanized steel fabrications shall be painted with one coat of zinc rich primer equal or equivalent to TNEMC Series 10 shop primer.

G. All connections shall be fully welded with ¼" minimum fillet unless otherwise noted.

H. Cutting torch shall not be used in the field except with specific prior written permission.

2.02 RODS, ANCHORS AND ATTACHMENTS TO MASONRY AND CONCRETE CONSTRUCTION

A. Rods and anchors shall meet the requirements listed above for the appropriate interior or exterior application.

1. Pinning Rods shall be threaded over their entire lengths unless otherwise noted.

2. Field-drilled and set anchor bolts for steel installation to concrete construction shall be:

3. Threaded rod for steel installation to concrete shall be set with Hilti HY200 Adhesive unless otherwise noted.

4. Field-drilled and set anchor bolts for steel installation to masonry construction shall be: galvanized threaded rod set with Hilti HY70 Adhesive and Screen Tubes unless otherwise noted.

5. Pre-set anchor bolts for attachment to Masonry and Concrete shall be ASTM A307, threaded for their entire lengths.

2.03 WELDING ELECTRODES

A. Welding electrodes for new non-stainless steel shall be AWS E70-XX.

PART 3 – EXECUTION

3.01 INSTALLATION AND ERECTION OF STRUCTURAL STEEL

A. Allow for erection loads, and for sufficient temporary bracing to maintain steel framing in a safe, plumb, and in true alignment until completion of erection and installation of permanent bracing connections.

B. Field-weld structural components only with written approval of Architect or where specifically indicated on the drawings.

C. Field-connect members with threaded fasteners; torque to snug-tight resistance per AISC Specification for Structural Joints Using ASTM A325 or A490 Bolts.

D. Do not field-cut or alter structural members without approval of the Architect.

E. After erection, prime welds, abrasions, and surfaces not galvanized, except surfaces to be in contact with concrete.

F. Provide and install Non-Shrink Grout under and behind steel bearing surfaces against masonry and concrete in accordance with the Contract Drawings and where required for uniform, full bearing against rough or canted masonry and concrete surfaces. Trowel grouted surface smooth, splay neatly to 45 degrees.

G. Structural Steel installation shall be done in consideration of median ambient temperatures and their effects on the alignment of the Steel Frame. Final tightening and adjustment of anchors to the existing structure shall not be done under extreme temperature conditions but shall be limited to when the temperature of the steel is between 40 degrees F and 70 degrees F.

H. Install all mechanically-set and adhesive-set drilled anchors in accordance with the respective product manufacturer's instructions.

I. Coordinate work with the general contractor who shall be responsible for shoring of existing elements that may be supported by or temporarily in the way of the structural steel.

J. Coordinate removal finishes and wood construction as necessary for installation of structural steel, submitting a list of all necessary removals to the Architect for review before proceeding with the work.

3.02 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect AESS as specified in Section 051200 - STRUCTURAL STEEL FRAMING. The testing agency will not be responsible for enforcing requirements relating to aesthetic effect.

B. Architect will observe AESS in place to determine acceptability relating to aesthetic.

3.03 REPAIRS AND PROTECTION

A. Testing Agency: The Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Field welds will be subject to inspection.

C. Testing agency will report inspection results promptly and in writing to Contractor and Architect.

D. Remove and replace work that does not comply with specified requirements.

END OF SECTION

SECTION 05 12 50

ARCHITECTURALLY EXPOSED STRUCTURAL STEEL

PART 1 - GENERAL

1.01 SUMMARY

A. Work of this Section includes architecturally exposed structural steel (AESS) members that form structural framing for frame-supported shade structures, shade canopies, cantilevers, shade walks, and similar elements as shown on the Drawings and specified herein, including:

1. Shade Systems, Inc. *Frame-Supported Products* such as Mega Spans, Squares & Rectangles, Cantilevers, Sails, Shade Kites, Shade Walks, Vehicle Parking canopies, and similar units (Basis of Design).

1.02 DESCRIPTION OF WORK

A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

1. Requirements for the appearance and surface preparation of architecturally exposed structural-steel.

2. Requirements in Section 051200 - STRUCTURAL STEEL FRAMING also apply to AESS

B. Related Work: The following items are not included in this Section and are specified under the designated Sections:

1. Section 051200 - STRUCTURAL STEEL FRAMING for additional requirements applicable to AESS.

1.03 DEFINITIONS

A. Architecturally Exposed Structural Steel where appearance and surface condition of steel is part of the architectural design intent.

B. Shade Structure Components: Exposed frame, posts, beams, rafter members, and detail elements associated with Shade Systems frame-supported products.

1.04 SUBMITTALS

A. Product Data: Manufacturer’s technical data for Shade Systems frame-supported products (catalog cut sheets, finishes, materials, connection details).

B. Shop Drawings: Shop Drawings for structural steel may be used for AESS provided items of AESS are specifically identified and requirements below are met for AESS.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

2. Include embedment drawings.

3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain. Indicate grinding, finish, and profile of welds.

4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections. Indicate orientation of bolt heads.

5. Indicate exposed surfaces and edges and surface preparation being used.

6. Indicate finish details.

7. Indicate special tolerances and erection requirements

C. Samples:

1. Color and finish samples for powder coat / galvanizing.

2. Submit samples of AESS to set quality standards for exposed welds.

D. Qualification Data: For qualified fabricator and installer.

1.05 QUALITY ASSURANCE

A. AESS Quality Standards: Comply with requirements of AISC Code of Standard Practice for Steel Buildings and Bridges, June 15, 2016 edition, Section 10, Architecturally Exposed Structural Steel.

1. AESS Category for Fabrication and Erection: Level 3.

B. Structural Steel Standards: Comply with AISC Specifications for structural steel.

C. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ACSE.

D. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.

1. Fabricator: ISO 9001 or equivalent fabricator with minimum five (5) years experience producing AESS and structural steel.

2. Welding: AWS D1.1 compliant certified welders.

E. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."

1.06 DELIVERY, STORAGE, AND HANDLING

A. Use special care in handling to prevent twisting, warping, nicking, and other damage. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.07 PROJECT CONDITIONS

A. Field Measurements: Where AESS is indicated to fit against other construction, verify actual dimensions by field measurements before fabrication.

1.07 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.

PART 2 – PRODUCTS

2.01 MATERIALS

A. General: Meet requirements of Section 051200 - STRUCTURAL STEEL FRAMING as amended below.

1. Structural Steel: ASTM A992 or equivalent.

2. Structural Tubing: ASTM A500 cold-formed where applicable.

3. Bolts: High-strength bolts per RCSC.

4. Fasteners: Stainless steel hardware.

2.02 MANUFACTURER

A. Basis of Design: Shade Systems, Inc. Frame-Supported Products — Their full line of welded and cold-formed steel frames for shade canopies as the basis for frame construction of exposed structural elements.

2.03 FABRICATION

A. Shop fabricate and assemble AESS to the maximum extent possible. Locate field joints at concealed locations if possible. Detail assemblies to minimize handling and to expedite erection.

B. In addition to special care used to handle and fabricate AESS, comply with the following.

1. Fabricate with exposed surfaces smooth, square, and free of surface blemishes including pitting, rust, scale, and roughness.

2. Grind sheared, punched, and flame-cut edges of AESS to remove burrs and provide smooth surfaces and edges.

3. Fabricate AESS with exposed surfaces free of mill marks, including rolled trade names and stamped or raised identification.

4. Fabricate AESS with exposed surfaces free of seams to maximum extent possible.

5. Remove blemishes by filling or grinding or by welding and grinding, before cleaning, treating, and shop priming.

6. Fabricate with piece marks fully hidden in the completed structure or made with media that permits full removal after erection.

7. Fabricate AESS to the tolerances specified in AISC 303 for steel that is designated AESS.

8. Seal-weld open ends of hollow structural sections with 3/8-inch closure plates.

9. Where frame members interface with shade canopy, maintain consistent alignment and level to support structural loads.

C. Curved Members: Fabricate indicated members to curved shape by rolling to final shape in fabrication shop.

1. Distortion of webs, stems, outstanding flanges, and legs of angles shall not be visible from a distance of 20 feet under any lighting conditions.

2. Tolerances for walls of hollow steel sections after rolling shall be approximately 1/2 inch.

D. Coping, Blocking, and Joint Gaps: Maintain uniform gaps of 1/8 inch with a tolerance of 1/32 inch.

E. Cleaning Corrosion-Resisting Structural Steel: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

F. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.

2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.

3. Weld threaded nuts to framing and other specialty items indicated to receive other work

2.04 SHOP CONNECTIONS

A. Bolts: Comply with requirements of Section 051200 - STRUCTURAL STEEL FRAMING. Provide bolt type and finish as noted herein and align bolt heads as indicated on the approved shop erection drawings.

B. Weld Connections: Comply with AWS D1.1 and Section 051200 - STRUCTURAL STEEL FRAMING for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work, and comply with the following:

1. Provide bolt type and finish as noted herein and align bolt heads as indicated on the approved shop erection drawings.

2.05 CORROSION PROTECTION AND FINISHES

A. Hot-dip galvanize or powder-coat all exposed steel per project finish schedule.

B. Provide architectural powder coat systems meeting ASTM standards or superior performance; include primer and topcoat.

C. Color selections as indicated on Drawings.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify, with steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Examine AESS for twists, kinks, warping, gouges, and other imperfections before erecting.

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

3.02 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep AESS secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

1. If possible, locate welded tabs for attaching temporary bracing and safety cabling where they will be concealed from view in the completed Work.

2. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.03 INSTALLATION

A. Erect structural steel per approved shop drawings, true to line and level.

B. Anchor and brace for building loads, wind, and seismic forces.

C. Install shade structure frames, posts, connectors, and accessories as specified by Shade Systems' instructions.

3.04 ALIGNMENT AND TOLERANCES

A. Maintain control of camber, alignment, and tolerances as required for AESS.

B. Exposed surfaces shall have uniform appearance with no visible distortion.

3.05 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect AESS as specified in Section 051200 - STRUCTURAL STEEL FRAMING. The testing agency will not be responsible for enforcing requirements relating to aesthetic effect.

B. Architect will observe AESS in place to determine acceptability relating to aesthetic.

3.06 REPAIRS AND PROTECTION

A. Remove welded tabs that were used for attaching temporary bracing and safety cabling and that are exposed to view in the completed Work. Grind steel smooth.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning

C. Protect finishes until final acceptance.

END OF SECTION

SECTION 13 31 23

TENSIONED FABRIC STRUCTURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Section includes an engineered tensioned fabric canopy systems including structural steel frame, tensioned membrane, connections, cables, fittings, anchorage, and accessories as shown on Drawings and specified in this Section.

2. Drawings indicate design intent with respect to sizes, shapes, and configurations of the tensioned fabric canopy. Provide all components and accessories required for complete tensioned fabric canopy system, whether or not specifically shown or specified.

3. The tensioned fabric structure will assume bolted/pinned connections for field assembly. No field welding will be permitted

1.02 DESCRIPTION OF WORK

A. The tensioned fabric structure Subcontractor shall be responsible for the structural design, detailing, fabrication, supply, and installation of the Work specified herein. The intent of this specification is to establish in the first instance an undivided, single-source responsibility of the Subcontractor for all of the foregoing functions.

B. All element sizes, material strengths, forces and quantities shown on the contract documents are to be taken as a developed concept. Final structural analysis and design are the responsibility of the subcontractor. The subcontractor is responsible at the time of bid to determine any additional costs related to their design and member sizing for the fabric roof.

C. Subcontractor’s Work shall include the structural design, supply, fabrication, shipment, and erection of the following items:

1. The architectural membrane as indicated on the drawings and in these specifications.

2. Cables and fittings.

3. Perimeter, catenary, and sectionalized aluminum clamping system.

4. Structural steel, including masts, trusses, struts, and beams as indicated on the drawings.

5. Fasteners and gasketing.

D. Related Requirements

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

2. Division 03 Section “Cast-in-Place Concrete” for concrete footings for posts of tensioned fabric structure.

3. Division 05 Sections "Structural Steel Framing" and “Architecturally Exposed Structural Steel" for steel structure supporting tensioned fabric structure

1.03 DEFINITIONS

A. Tensioned Fabric Structure: Cable and/or frame supported tensioned membrane-covered fabric structure; incorporating a fabric with low elongation characteristics under tension and capable of an anticlastic configuration. Fabric structures in which fabric is applied as flat or mono-axially curved configurations are not acceptable

1.04 REFERENCES

A. Reference Standards: Except as otherwise shown or noted, all work shall comply with the requirements of the following codes and standards:

1. American Institute of Steel Construction (AISC).

    a. Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings.

    b. Code of Standard Practice for Steel Buildings and Bridges.

    c. Specification for Structural Steel Buildings – Allowable Stress Design and Plastic Design.

    d. Specification for Allowable Stress Design of Single-angle Members.

    e. Seismic Provisions for Structural Steel Buildings.

2. American Society of Civil Engineers

    a. ASCE 19: Structural Applications of Steel Cables for Buildings.

    b. ASCE/SEI 7 – Minimum Design Loads for Buildings.

3. American Society of Testing and Materials (ASTM).

    a. ASTM A-500, A-135, E-8 for structural steel and tubing.

    b. ASTM A586: Standard Specifications for Zinc-Coated Steel Structural Strand.

    c. ASTM A603: Standard Specifications for Zinc-Coated Steel Structural Wire Rope.

d. ASTM D4851-88: Standard Test Methods for Coated and Laminated Fabrics for Architectural Use.

e. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials.

f. ASTM E108: Standard Test Methods for Fire Test and Roof Coverings.

g. ASTM E136: Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

h. ASTM C423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

i. ASTM E424: Standard Test Method for Solar Energy Transmittance and Reflectance of Sheet Materials

4. American Welding Society (AWS).

   a. AWS D1.1: Structural Welding Code.

   b. AWS 2.4: Symbols for Welding and Nondestructive Testing.

5. Aluminum Association

   a. Specifications for Aluminum Structures.

6. National Fire Protection Association (NFPA).

   a. NFPA 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

7. Steel Structures Painting Council (SSPC).

   a. Steel Structures Painting Manual, Volumes 1 and 2.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include styles, material descriptions, construction details, fabrication details, dimensions of individual components and profiles, hardware, fittings, mounting accessories, features, and finishes for tensioned fabric structures.

2. Include rated capacities, light transmissions, and operating characteristics of furnished specialties and accessories.

B. Design Drawings:

1. Include plans, elevations, sections, mounting heights, and frame assembly details.

2. Preliminary member sizes with wall thickness TBD.

3. Preliminary footing layout and foundation design with final depth TBD.

4. Show intended fabric attachment hardware and details.

5. Identify direction, details and locations of fabric seams.

6. Show details of fabric membrane dimensions including length of spans, sag in curvature and actual shaded area.

C. Engineered Drawings (submit after Design Drawings have been approved):

1. Calculations with Wet Stamp seal of a Professional Engineer with a license in the same state as the project location.

2. Engineering Drawings with Wet Stamp seal of a Professional Engineer with a license in the same state as the project location.

3. Include plans, elevations, sections, mounting heights, and frame assembly details.

4. Provide frame member sizes and required wall thicknesses.

5. Identify all welding requirements.

6. Detail all bolted and/or pin connections for frame assembly.

7. Identify required sizes of bolts, pins, plates and tubing.

8. Verify the fabric meets minimum engineering requirements.

9. Detail fabric attachment methods and identify thickness of all membrane plates, clamps and other attachment components.

10. Call out all cable sizes and pretension requirements.

11. Submit anchor-bolt plans before foundation work begins. Include location, diameter, and projection of anchor bolts required to attach the tensioned fabric structures to foundation. Indicate column reactions at each location.

D. Samples for Initial Selection: Electronic file of available frame finish colors.

E. Samples for Verification: For the following:

1. Fabric: Qty. (3) 8 ½" x 11" samples of fabric as selected by the Design Conusltant.

2. Frame Finish: Qty. (3) Sample chips, not less than 2" x 3" in size.

F. Provide a Schedule of Values within (2) weeks of project award

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, fabricator and professional engineer

B. Welding certificates.

C. Sample Warranty: For fabric warranty.

1.07 CLOSEOUT SUBMITTALS

A. Maintenance Data: For tensioned fabric structures to include in operation and maintenance manuals

1. Include the following:

a. Methods for maintaining tensioned fabric structure fabrics and finishes.

b. Precautions about cleaning materials and methods that could be detrimental to fabrics, finishes, and performance

1.08 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate tensioned fabric structures similar to those required for this Project and whose products have a record of successful in-service performance

1. Fabricator is a Master Fabric Craftsman certified by the Industrial Fabrics Association International.

2. Fabricator's responsibilities include fabricating and installing tensioned fabric structures and providing professional engineering services needed to assume engineering responsibility.

3. Fabricator’s engineering services must utilize Finite Element Analysis software that performs fabric form finding and takes into account fabric material properties and pre-stress characteristics.

4. Fabricator must have proven record of at least (5) successful projects of similar size and similar specified fabric material.

5. Fabricator must have been in continuous operation as a professional tensioned fabric structure manufacturer for minimum of (10) years prior to contract.

B. Installer Qualifications: Fabricator of products.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.09 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit installation of tensioned fabric structure in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.

B. Field Measurements: Where tensioned fabric structure installation is indicated to fit to other work, verify dimensions of other work by field measurements before fabrication and indicate measurements on Shop Drawings. Allow clearances for fenestration operation throughout the entire operating range. Notify Design Consultant of discrepancies. Coordinate fabrication schedule with construction progress to avoid delaying the Work

1.10 WARRANTY

A. Special Warranty: Manufacturer and fabricator agree to repair or replace components of tensioned fabric structures that fail in materials or workmanship within specified warranty period of one year from the date of Substantial Completion.

1. Failures include, but are not limited to, the following:

a. Structural failures including framework.

b. Deterioration of fabric including seam failure.

c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period, Fabric: Reference the manufacturer's limited warranty for the specified fabric manufacturer and product.

3. Warranty Period, Cables, Securement Devices and Accessories: One year from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 FRAME SYSTEM

A. Frame Materials:

1. Structural frame tubing: Cold-formed steel per ASTM A-500 and ASTM A-135; minimum yield 40 ksi, tensile strength 45 ksi.

2. Steel surface preparation: Blast cleaned per SSPC and prime/powder-coat or galvanized for corrosion resistance.

3. Welding: Certified welds per AWS D1.1; no field welding except as noted.

2.02 FASTENERS/HARDWARE

A. Stainless steel fasteners, tensioning hardware, and cable attachments.

B. Cables: Pre-cut, independent for each fabric edge; terminate in factory-provided loops.

2.03 FABRIC MEMBRANE

A. Membrane: High-performance shade fabric with UV stabilizers and flame retardants; passes NFPA 701.

B. Provide membrane pre-finished with reinforced hems, durable stitching, and tensioning interface.

C. Factory pre-inserted tension cables in hems for field attachment.

2.04 FINISHES

A. All exposed steel frame surfaces shall have a durable architectural powder coat finish.

2.05 MANUFACTURER

A. Basis of Design: Shade Systems, Inc. Frame-Supported Products — Their full line of welded and cold-formed steel frames for shade canopies as the basis for frame construction of exposed structural elements.

2.06 PERFORMANCE / DESIGN CRITERIA

A. Comply with local building codes and respective loading criteria for Snow Loads, Live Loads, Dead Loads, Wind Speed, and Seismic Loads.

B. Life Safety: Tensioned fabric structure shall be detailed so that no life safety issue is created in the event of a loss of a part of the membrane. The tensioned fabric structure shall not rely on the membrane for structural stability

C. Delegated Design: Engage a qualified professional engineer to design tensioned fabric canopy system. Delegated design engineering requirements include, but are not limited to, the following:

1. Prepare structural design drawings defining the precise interface geometry determination, reaction loads imposed on structural steel framing, anchoring loads, connection details, interfaces and seam layouts.

D. In engineering tensioned fabric canopy system fittings and accessories to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:

1. Steel: 72 percent of minimum yield strength.

2. Stainless Steel: 60 percent of minimum yield strength.

3. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum ultimate tensile strength divided by 1.95

E. Structural Performance: Tensioned fabric canopy system shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to ASCE/SEI 7:

1. Wind Loads: To be determined by Subcontractor’s Engineer of Record. Design structure to resist design wind speeds in accordance with IBC/ASCE 7; typical Shade Systems Frame products are engineered for up to 165 mph (frame only) and 90 mph with canopy, with options for higher.

2. Live Loads: To be determined by Subcontractor's Engineer of Record.

3. Snow Loads: To be determined by Subcontractor's Engineer of Record.

4. Seismic Loads: To be determined by Subcontractor's Engineer of Record

5. Do not rely on membrane for primary structural stability; frame must carry all applied loads.

F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 degree F, ambient; 180 degree F, material surfaces

G. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine structural steel framing and other substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.

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

3.02 INSTALLATION

A. Install tensioned fabric structures per manufacturer's instructions and engineered drawings.

B. Ensure field conditions do not impair integrity of the frame or membrane.

C. Anchors: Provide cast-in anchor bolts and embed plates within concrete footings sized per engineered design reactions.

3.03 TENSIONING

A. Apply membrane tension per manufacturer's and Engineer of Record's criteria to eliminate sag and maintain stability under design loads.

3.04 INSPECTION AND ADJUSTMENT

A. Inspect all connections, cable tension, anchorage, and finishes.

B. Adjust as necessary to achieve design geometry and specified performance.

3.05 CLEANING AND PROTECTION

A. Clean installed system; protect against damage during remainder of construction.

END OF SECTION