



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. P26-3670-C1A

Title: Drainage Repair and Replacement

Location: Essex, Middlesex, Suffolk, Norfolk, Bristol, Plymouth, Barnstable, Dukes, Nantucket, Worcester, Hampden, Hampshire, Franklin & Berkshire

GENERAL BID proposals shall be submitted on a form furnished by the Department and will be received by 12:00 PM on Thursday August 20, 2026, through DCR's E-bid room at www.bidexpress.com/businesses/36765/home.

Individual sets of contract documents will only be available on 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 **Mandatory** pre-bidding virtual conference for prospective bidders will be held from 1-1:30pm on Aug 5th, 2026, via TEAMS using this link – <https://teams.microsoft.com/meet/28717011322206?p=G6Ru6vXPAsApXJD7zD>

The project consists of both emergency & scheduled repairs and/or adjustment of rebuilding of drainage structures to proper grade, as well as the emergency & scheduled repair and/or replacement, and installation of new & existing statewide DCR drainage infrastructure

The estimated project cost is **\$10,500,000**

The work is to be accomplished within **1095** calendar days of notice to proceed. Liquidated damages in the amount of **\$500** 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 **DRAINAGE** 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 6% for MBE (Minority Business Enterprise) 10% for WBE (Women Business Enterprise) and 3% 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.

Nicole LaChapelle, Commissioner
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.: P26-3670-C1A
Title: Drainage – Repair and Replacement

Project Scope: The project consists of both emergency & scheduled repairs and/or adjustment of rebuilding of drainage structures to proper grade, as well as the emergency & scheduled repair and/or replacement, and installation of new & existing statewide DCR drainage infrastructure.

Deadline for filing general bids is 12:00 P.M. on August 20, 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 decisions, 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: Thomas Valton, Director
Stormwater & Environmental Section
Department of Conservation and Recreation

Email: Thomas.Valton@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](tel: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:

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. 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 the contractual liability coverage, and the Contractor's Protective Liability coverage is in force. Certificates shall include specific acknowledgment that the coverages 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 &	<u>500,000.00</u> each occurrence
Property Damage	<u>1,000,000.00</u> 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 VOB 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 VOB 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 & VOB 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 & VOB 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 & VOB availability, (ii) the geographic location of the project to the extent related to MBE, WBE & VOB 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 & VOBES subcontractors sufficient to meet the MBE,WBE & VOBES 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 & VOBES 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 (i) each solicited, and (ii) each MBE,WBE & VOBES 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, including the reason for rejecting any MBE,WBE & VOBES 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 & VOBES 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 & VOBES 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 & VOBES participation.

8.3 Any reduction or waiver of the MBE,WBE & VOB 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 & VOB requirements for this Contract, (ii) a completed Letter of Intent in the form provided by the Awarding Authority for each MBE,WBE & VOB listed in the Schedule for Participation, and (iii) a current SDO certification letter for each MBE,WBE & VOB listed in the Schedule of MBE,WBE & VOB Participation showing that the MBE,WBE & VOB 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 & VOB Work") with enough specificity to permit the Awarding Authority to identify the items of contract work that the MBE,WBE & VOB 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 & VOB 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 & VOB 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 & VOB and appropriate Letters of Intent and SDO certification letters establishing that the MBE,WBE & VOB 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 & VOB 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 paragraph 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 - VOB 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)
(Print Name of General Contractor)

_____(Seal)
(Print Name of Surety)

By _____
(Signature – Title)

By _____
(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)
(Print Name of General Contractor)

_____(Seal)
(Print Name of Surety)

By _____
(Signature – Title)

By _____
(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

N/A

_____, 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 6%	Dollar Value of Participation	Nature of Participation
1. _____ _____		
2. _____ _____		
3. _____ _____		
4. _____ _____		
5. _____ _____		
6. _____ _____		

Total MBE Commitment: _____

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

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 10%	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/legislation/eexecorder/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 VOB Participation and appropriate Letters of Intent establishing that the VOB 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.

Contractor Authorizing Signature

Date:_____

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 VOB 3%	Dollar Value of Participation	Nature Participation
1. _____		

2. _____		

3. _____		

4. _____		

5. _____		

6. _____		

Total VOB Commitment: _____

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

The bidder agrees to furnish implementation reports as required by the Department to indicate the VOB(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 VOB 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 VOB will be credited toward VOB 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 VOB 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

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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 or 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 be 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. Failure to Complete Work on Time - Liquidated Damages.

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. Final Acceptance of the Work.

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 incompleteness 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. One-Year Warranty Repair List and Inspection.

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. Change Orders Generally.

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. False Claims. Statutory Provisions Regarding Changes.

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. Mediation.

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. Schedule of Values.

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

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 (I) 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. Contracts for Public Works Governed by M.G.L. c. 30, sec. 39G:

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 deposited 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 then 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 of 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. Liens

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. Final Payment: Release of Claims by Contractor.

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 Warranties.

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 amended, 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 respect 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. Sanctions.

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:

(1) 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 SOMBWA, 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 Contractor 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. Suspension of Payment and/or Performance for Noncompliance.

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 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.

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 any provision of this Article.

**COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION 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 VOB 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 VOB identified as a veteran-owned small business via the VetBiz database shall count towards meeting the Program participation goal.

The Contractor must demonstrate that VOBs 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 VOB 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 SDVOB 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 VOB E 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 VOB E 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 VOB E 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 VOB E 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- VOB E or non- VOB E general Bidder to meet the goals established for this Contract based upon any or all the following:
- a) actual VOB E 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 VOB Es; and/or
 - e) other relevant factors, including a **documented** inability by the prospective Bidder to obtain commitments from VOB E subcontractors sufficient to meet the VOB E 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 VOB Es. 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 VOB Es. The Bidder shall also demonstrate that, where commercially reasonable, subcontracts were divided into units capable of being performed by VOB Es.
 - 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 VOB Es qualified to perform such work. The Bidder shall identify each VOB E 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 VOB E solicited, including the reason for rejecting and VOB E 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 VOBES 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 VOBES goals.

D) The Bidder may also submit any other information supporting its request for a waiver or reduction in the VOBES 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 VOBES 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 VOBES 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 VOBES participation in amounts equal to or exceeding the VOBES 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 VOBES (the "VOBES Work") with enough specificity to permit the Awarding Authority to identify the items of contract work that the VOBES will perform for VOBES participation credit. The Awarding Authority reserves the right to reject any Letter of Intent if the price to be paid for the VOBES 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 VOBES 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 VOBES Participation and appropriate Letters of Intent establishing that the VOBES 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 VOBES 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 VOBES Participation with its Bid. A filed Sub-Bidder may, at its option, submit a Letter of Intent with its Bid if it is a VOBES. If a filed sub-Bidder intends to sub-subcontract work to a VOBES, 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 VOB with its Bid. A filed sub-Bidder can subcontract out up to 20% of its work to VOBs, 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:

☐ **Design Contract**

☐ **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 CONSERVATION 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. _____

DCR Part III General Conditions of the Contract

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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 MASSACHUSETTS
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)	(B)	Employer Contributions			(F)	(G)
		S	M	T	W	T	F	S	Total Hours	Hourly Base Wage	(C) Health & Welfare	(D) Pension	(E) Supp. unemplo yed	[B+C+D+E] Hourly Total Wage (prev.	[A*F] Weekly Total Amount

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 ☐ VOB			\$	\$	\$	\$
☐ MBE ☐ WBE ☐ VOB			\$	\$	\$	\$
☐ MBE ☐ WBE ☐ VOB			\$	\$	\$	\$
☐ MBE ☐ WBE ☐ VOB			\$	\$	\$	\$
☐ MBE ☐ WBE ☐ VOB			\$	\$	\$	\$
☐ MBE ☐ WBE ☐ VOB			\$	\$	\$	\$
☐ MBE ☐ WBE ☐ VOB			\$	\$	\$	\$

* MBE, WBE and VOB 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 VOB E 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

FOR MBE/WBE/VOBE FIRM

Authorized Signature

Authorized Signature

Print Name

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: _____
Signature	Designer		Authorized

_____	Date	_____	Date
Resident Engineer		Project Manager	
_____	Date		
Project Engineer			

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



BIDPACKAGE

PART IV

SPECIAL CONDITIONS OF THE CONTRACT

Drainage - Repair & Replacement

Contract NO. P26-3670-C1A

PART IV SPECIAL CONDITIONS OF THE CONTRACT

Contract No. P26-3670-C1A

DRAINAGE REPAIR & REPLACEMENT

SPECIAL PROVISIONS

GENERAL INFORMATION

Drainage Infrastructure located mostly within the Boston Metropolitan Area (defined as EAST OF ROUTE 495) will be the highest priority locations for this Contract. Additional, locations NORTH, SOUTH, OR WEST OF ROUTE 495 will also be identified in this Contract.

Drainage pipes repaired/replaced under this Contract shall be a minimum size of ten inches (10") diameter, unless otherwise approved by the Engineer.

The quantities of the various classes of work to be done and materials to be furnished under this contract, as given on the bid sheets, are approximate, and are only for the purpose of comparing, on a uniform basis, the bids for this contract. The DCR is not to be held responsible if any of the said estimated quantities are found to be incorrect. The Contractor shall make no claim for damages or for anticipated profits or losses arising from any difference between the estimated quantities and the actual quantities of either work done or materials delivered.

CONTACT INFORMATION

The following is a list of the contact information for Engineering:

Project Manager

Thomas Valton, Director, Stormwater & Environmental

Thomas.valton@mass.gov

TEST PITS:

At the Resident Engineer's discretion, the contractor shall excavate test pits as part of the investigation process. The contractor can make no claim if the test pit excavation reveals no pipe in that location. The contractor shall be reimbursed fully for test pit excavation work through Item 010-111, "Test Pit Excavation".

IMPORTANT ESTIMATING NOTES TO BIDDERS:

The Engineer reserves the right to increase or decrease quantities from the estimate of the Contract, and to change location of work from one DCR location to another, with no additional compensation allowed the Contractor.

The Contractor may be directed to do work associated with the Items of this Contract at various locations throughout the DCR, and the quantities of those relevant Items, whether small or large, shall not serve as a basis for additional compensation to the Contractor. All work associated with the Items of this Contract done under this Contract shall be paid for using the Contractor's bid prices of those Items.

WORK-HOURS:

The Contractor is expected to work an 8-hour workday. The Contractor's hours for performing related work on this contract are 7:00 AM to 3:30 PM, unless permission is granted by the Engineer to change the work hours mandated for the Contractor to work each day. Travel time is not included. All expected travel will be considered incidental, part of the billable contract items

and paid by the Contractor.

Holidays may be requested by DCR or the Contractor, via phone call or email. Written approval by DCR for scheduled Holiday work will be granted on a case-by-case basis.

Holidays that may occur during the contract period:

Massachusetts Legal Holidays

Holiday	2023	2024	2025
New Year's Day January First	Jan. 1, Sun. (3)	Jan. 1, Mon.	Jan. 1, Wed.
Martin Luther King, Jr. Day Third Monday in January	Jan. 16, Mon.	Jan. 15, Mon.	Jan. 20, Mon.
Washington's Birthday Third Monday in February	Feb. 20, Mon.	Feb. 19, Mon.	Feb. 17, Mon.
Patriots' Day Third Monday in April	Apr. 17, Mon.	Apr. 15, Mon.	Apr. 21, Mon.
Memorial Day Last Monday in May** (1A)	May 29, Mon.** (1A)	May 27, Mon.** (1A)	May 26, Mon.** (1A)
Juneteenth Independence Day June 19th	June 19, Mon.	June 19, Wed.	Jun 19, Thurs.
Independence Day July 4th**	July 4, Tue. **	July 4, Thurs.**	July 4, Fri.**
Labor Day First Monday in September**	Sept. 4, Mon.**	Sept. 2, Mon.**	Sept. 1, Mon.**
Columbus Day Second Monday in October* (Restrictions until 12 noon) (2)	Oct. 9, Mon.* (2)	Oct. 14, Mon.*(2)	Oct. 13, Mon.*(2)
Veterans' Day November 11th* (Restrictions until 1pm) (2)	Nov. 11, Sat.* (2)	Nov. 11, Mon.** (2)	Nov. 11, Tues.** (2)
Thanksgiving Day Customarily the fourth Thursday in November* (1)	Nov. 23, Thurs.* (1)	Nov. 28, Thurs.*(1)	Nov. 27, Thurs.*(1)
Christmas Day December 25th* (1)	Dec. 25, Mon.* (1)	Dec. 25, Wed.*(1)	Dec. 25, Thurs.*(1)

Sunday Holidays: **In the event legal holiday falls on a Sunday, the holiday will be observed on the following Monday.

If the contract end date gets extended for any reason, the above legal holidays will still be honored.

Site traffic, vehicle & pedestrian, is to be always maintained, except as permitted by the Engineer. The full width of the roadways, sidewalks & driveways must be opened to normal traffic after each scheduled workday, and the Contractor's equipment and all materials must be removed, except as permitted by the Engineer. The Contractor shall provide for the removal of all materials spilled from his trucks onto the roadways. All surplus or unsuitable materials which cannot be used within the limits of the work shall be disposed of by the Contractor off of DCR property without additional compensation.

The Contractor shall furnish the most affordable & sufficient work force staffing and equipment to be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress, which shall insure the completion of the Work within the Contract

Time. If, at any time, such work force staffing appears to the Department to be inefficient, inappropriate, or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, the Department may order the Contractor to increase the efficiency, change the character or increase the work force staffing and equipment, and the Contractor shall conform to such order and no additional compensation shall be due the Contractor. Failure of the Department to give such order shall in no way relieve the Contractor of its obligations to secure the quality of the work and rate of progress required.

EMERGENCY REPAIR WORK

For any work that, in the judgment of the DCR Resident Engineer, requires immediate repair response (defined by response within four (4) hours from contractor-notification), the repair response is deemed an “emergency”, and the Contractor is eligible for payment under Item 022-010, “Emergency Response Mobilization” - (see Part V.).

EMERGENCY REPAIR RELATED TO ACCIDENTS

The DCR Resident Engineer shall check with DCR’s Accident Recovery Program (A.R.P.) staff, to verify whether the area requiring repairs is related to an accident where a known insured party is involved. If so, the DCR Resident Engineer shall also check with ARP staff to see if they have any specific requirements for this repair. All repair costs related to that repair shall be compiled by the DCR Resident Engineer, working with the DCR Project Engineer, and submitted to ARP staff, so that ARP staff can enter into discussions with the relevant insurance company to pursue reimbursement. The work shall be carried on in such a manner as to always provide safe passage for public travel and with least obstruction to traffic. All normal pedestrian and vehicular traffic on existing streets and structures shall be maintained. by proper scheduling of work or by providing equal substitute facilities. The convenience of the public and of residents along and adjacent to the highways shall be provided for in an adequate and satisfactory manner. Adequate access shall be maintained to all buildings in use along the existing streets.

SAFETY

The Contractor shall take all necessary precautions and provide all necessary safeguards to prevent personal injury and property damage. The Contractor shall provide protection for all persons including, but not limited, to its employees and employees of other contractors or subcontractors, members of the public, and employees, agents, Department, the regulatory agencies that may be on or about the Work. The Contractor shall provide protection for all public and private property including, but not limited to, structures, pipes, and utilities, above and below ground. The Contractor shall provide and maintain all necessary safety equipment such as fences, barriers, signs, lights, walkways, and guards, and shall take such other action as is required to fulfill its obligations under this Sub-Section. The Contractor shall comply with all applicable federal, state, and local laws, ordinances, rules and regulations and lawful orders of all authorities having jurisdiction for the safety of persons and protection of property. The Contractor shall designate a responsible member of its organization at the site whose duty shall be responsible for all matters of safety. This responsible person shall have the authority to take immediate action to correct unsafe or hazardous conditions and to enforce safety precautions and programs. The Contractor's duties and responsibilities for safety and for protection of the Work shall continue until Final Completion is considered acceptable by the Department.

DIG SAFE NOTIFICATION AND NOTIFICATION TO OTHER UTILITIES

In accordance with MGL, c. 82, § 40, and seq., the Contractor shall contact DIG-SAFE at 1-888-DIG-SAFE to notify those utilities which subscribe to DIG-SAFE of the upcoming work in an area where their utilities are located to mark their respective utilities. For those utilities which do not subscribe to DIG-SAFE, the Contractor shall notify those utilities directly of the upcoming work in an area where their utilities are located to mark their respective utilities. The Contractor shall not

commence work in the area of the respective utility until the 72-hour waiting period, exclusive of Saturdays, Sundays and legal holidays, has elapsed. The Contractor shall provide the Owner with a written statement containing the DIG-SAFE number, the utilities to be notified by DIG-SAFE, the time of assignment and a list of the other utilities contacted

CLEANUP AND DISPOSAL OF EXCESS MATERIAL

During the Work, the Contractor shall keep the site of its operations in as clean and neat a condition as possible. The Department reserves the right to direct site cleanup if deemed necessary. The Contractor shall dispose of all refuse resulting from the construction Work and, at the conclusion of the Work, it shall remove and haul away any surplus excavation, broken pavement, lumber, roofing materials, equipment, temporary structures, and any other refuse remaining from the construction operations and shall leave the entire site of the Work in a neat and orderly condition. To prevent environmental pollution arising from the construction activities related to the performance of this Contract, the Contractor and its Sub-Contractors shall comply with all applicable federal, state and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and elsewhere in the Specifications. The Contractor is advised that the disposal of excess excavated material in wetlands, stream corridors and flood plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by it shall be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. Therefore, the Contractor shall be required to remove the fill at its own expense and restore the area impacted

Areas beyond the site of the work that are damaged by the Contractor shall be restored to their original condition at his own expense.

PHONE & LAP-TOP COMPUTER

The Contractor shall provide the Resident Engineer with a phone (I-Phone, Smartphone or equal), and a lap-top computer with carrying case and printer for the duration of this Contract. All costs associated with the phone and lap-top computer shall be borne by the Contractor, and shall be considered incidental to this Contract. The phone shall be a the newest Apple I-Phone or Samsung comparable. The lap top computer shall meet the following criteria or comparable: Windows 11 Home - version 25h2, Processor - Intel(R) Core(TM) Ultra 9 185H (2.50 GHz), Installed RAM 32.0 GB (31.5 GB usable) Graphics card - NVIDIA GeForce RTX 4070 Laptop GPU (8 GB) Intel(R) Arc(TM) Graphics (128 MB) Storage - 281 GB of 954 GB used. System type - 64-bit operating system, x64-based processor
Pen and touch available for this display

LASER-LEVEL PROVIDED TO RESIDENT ENGINEER DURING CONTRACT:

The Contractor shall supply and maintain, for the DCR Resident Engineer, a laser level capable of single-person operation, throughout the life of this Contract. The laser-level shall be one of the following models:

- CST Berger 57-LM800GRPKG Complete Package Single Beam Self-Leveling Rotary Laser
- Spectra Precision Laser "LL300"
- Northern Tool – David White Self-Leveling Rotary Laser Level Package
- or Approved Equal

All purchase and maintenance costs associated with the laser level shall be borne by the Contractor.

SANITARY REGULATIONS

The Contractor shall provide adequate sanitary facilities when requested by the Agency for the use of DCR personnel and those employed on the Work. Such facilities shall be made available when the first employees arrive on the site of the Work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work in suitable numbers and at such points and in such manner as may be required. The Contractor shall always maintain the sanitary facilities in a satisfactory and sanitary condition and shall enforce their use. It shall rigorously prohibit the committing or nuisances on the site of the Work, on the lands of the Department or on adjacent property.

LINES, GRADES AND MEASUREMENTS

The Contractor shall employ and pay for a Massachusetts Registered Land Surveyor as directed by the Department. The Contractor shall require said Surveyor to establish all lines, elevations, reference marks, batter boards, etc., needed by the Contractor during the progress of the Work and, from time to time, to verify such marks by instrument or other appropriate means. The Department shall be permitted at all times to check the lines, elevations, reference marks, batter boards, etc., set by the Contractor, who shall correct any errors in lines, elevations, reference marks, batter boards, etc. disclosed by such check. Such a check shall not be construed to be an approval of the Contractor's work and shall not relieve or diminish in any way the responsibility of the Contractor for the accurate and satisfactory construction and completion of the entire Work. The Contractor shall make, check, and be responsible for all measurements and dimensions necessary for the proper construction of and the prevention of miss-fittings in the Work

PROGRESS CHART

The Contractor shall prepare and maintain a Progress Chart drawn to a suitable scale, so as to indicate with symbols the percentage of the work completed at any time. The Contractor shall correct the Progress Schedule at the end of each month and submit copies of the same to the Engineer.

WATER SUPPLY

The Contractor shall make all arrangements to provide and maintain at his own expense an adequate supply of water of a quality suitable for the required construction and domestic use and for drinking water. Water used for human consumption shall be kept free from contamination and shall conform to the requirements of State and Local Authorities for potable use.

WEATHER CONDITIONS

In the event of temporary suspension of work or during inclement weather, or whenever the Engineer shall direct, the Contractor will cause his Sub-Contractors to protect carefully his and their work and materials against damage or injury from this weather. If, in the opinion of the Engineer, any work or materials have been damaged, or injured, by a failure on the part of the Contractor, or any Sub-Contractor, to protect his work, such work and materials shall be removed and replaced at the Contractor's expense.

NOISE LIMITATIONS

Air Handling (AH) equipment to be furnished under this Contract, unless specified otherwise in the Specifications, shall be designed to ensure that the sound pressure levels do not exceed 85 decibels over a frequency range of 37.8 to 9600 cycles per second at a distance of three (3) feet from any portion of the equipment, under any load condition, when tested using standard equipment and methods. Noise levels shall include the noise from the motor. Mufflers or external baffles shall not be acceptable for the purpose of reducing noise. Data on noise levels shall be included with shop drawing submittals

INSPECTION ASSISTANCE

The Contractor shall provide ready and convenient access to the work zones for the Engineer and Inspection Agencies, including furnishing ladders, and other facilities required for such access. The Contractor's charges for all such assistance to the inspectors shall be included in the unit prices of the various items of work.

CAUTIONARY NOTE ON WORK IN WETLANDS / RIVERFRONT AREAS:

For **any work** in "wetland areas" (inside the 100' buffer zone) or a "riverfront area" (inside the 200' buffer zone), DCR staff and the Contractor must be aware that local Conservation Commission approval may be required before the start of any work.

OPEN EXCAVATIONS

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. For trench excavation, the Contractor shall, at its own expense, provide suitable and safe bridges and other crossings for accommodating travel by emergency equipment and workmen. Bridges provided for access during construction shall be removed when no longer required. The length or size of trench excavation shall be controlled by the surrounding conditions but shall always be confined to the limits prescribed by the Department. If the excavation becomes a hazard or if it excessively restricts traffic at any point, the Contractor shall use special construction procedures such as limiting the length of the open trench, prohibiting stacking excavated material in certain areas and requiring that the trench not remain open overnight.

CLEANUP AND DISPOSAL OF EXISTING DEBRIS ON SITE

The Contractor shall be responsible for the removal and disposal of any debris that is currently located on site in the area of the Work, and as directed by the Department.

CLEANUP AND DISPOSAL OF EXCESS MATERIAL

During the Work, the Contractor shall keep the site of its operations in as clean and neat a condition as possible. The Department reserves the right to direct site cleanup if deemed necessary. The Contractor shall dispose of all refuse resulting from the construction Work and, at the conclusion of the Work, it shall remove and haul away any surplus excavation, broken pavement, lumber, roofing materials, equipment, temporary structures, and any other refuse remaining from the construction operations and shall leave the entire site of the Work in a neat and orderly condition. To prevent environmental pollution arising from the construction activities related to the performance of this Contract, the Contractor and its Sub-Contractors shall comply with all applicable federal, state and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and elsewhere in the Specifications. The Contractor is advised that the disposal of excess excavated material in wetlands, stream corridors and flood plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by it shall be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. Therefore, the Contractor shall be required to remove the fill at its own expense and restore the area impacted.

ENVIRONMENTAL & CULTURAL PERMITTING

Ecological and cultural permitting requirements for this contract will be completed by DCR. Cooperation between DCR, Contractor/Subcontractor and DCR hired Consultants is expected. Any permits that will be issued to DCR will be provided prior to the start of that work. Any order of conditions issued should be closely reviewed and followed to ensure compliance. In locations where permitting is needed, meetings with the permitting agencies may be required prior to and during the construction process. All meetings and measures utilized to maintain compliance with the issued permits will be considered a part of the various line items and no additional cost will be paid for this work by the Department.

This section of the Special Conditions section is for informational purposes only, to inform the Contractor that environmental oversight will be on-going on the construction sites during the entire construction period by Department, State, and municipal employees. Environmental oversight will provide the following assistance and guidance to the Department:

1. Oversee implementation of mitigation measures prior to, during and after construction.
2. Observe construction activities in the vicinity of rare species populations, wetlands, and exemplary natural communities.
3. Work with Department and Contractor to modify the design, if necessary, of the roadway and mitigation measures as needed to avoid and mitigate disturbance to rare species populations, wetlands, and exemplary natural communities.
4. Recommend to the Engineer to stop any work that may impact rare species populations, exemplary natural communities or wetlands that have not been identified in permitting as unavoidable or rare species populations discovered during construction.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION FILE NUMBER SIGN

This project is subject to Massachusetts General Laws, Chapter 131, Section 40 as amended. Signs shall be in accordance with the latest MassDOT Construction Standards. All costs for the manufacture, erection, maintenance, moving, and removal of the signs shall be absorbed by the contractor with no additional compensation other than the contract unit prices. Signs shall be as follows:

	2'-0"
0	MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
1	NO.

Notes:

1. Contractor is to submit letter size and spacing for the completion of this sign according to the sketch given.
2. Sign plate shall be 3/4" plywood (Marine Grade)
3. The location and method of installation of this sign shall be determined by the department.
4. One (1) sign per each project, if an Orders of Conditions is issued, is required.

PATENTED DEVICES, MATERIALS AND PROCESSES (Amending Subsection 7.06)

Replace subsection 7.06 of the MassDOT Standard Specifications with the following:

It is mutually understood and agreed that, without exception, Contract prices are to include all royalties and costs arising from patents, trademarks and copyrights in any way involved in the work. It is the intent that whenever the Contractor is required or desires to use any design, device, material, or process covered by letters patent or copyright, the right for such use shall be provided for by suitable legal agreement with the patentee or owners. A copy of this agreement shall be filed with the Department; however, whether or not such agreement is made or filed as noted, the Contractor and the surety in all cases shall indemnify and save harmless the Party of the First Part from any and all claims for infringement by reason of the use of any such patented design, device, material or process to be involved under the Contract. He, or They, shall indemnify the Party of the First Part for any cost, expenses, and damages which it may be obliged to pay, by reason of any such infringement, at any time during the prosecution or after the completion of the work.

PUBLIC SAFETY AND CONVENIENCE

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

The Contractor shall provide necessary access for fire apparatus and other emergency vehicles to abutting properties on short notice.

At the end of each working day where trenches that are in areas of public travel are covered with steel plates, each edge of the plates shall be either beveled or protected by a bituminous concrete ramp at a slope of 2 feet horizontally to 1 inch vertically. Any temporary patching material may be used to construct the ramps. The cost of necessary patching materials, steel plates and their maintenance and removal, will be considered incidental to the item involved with NO separate payment.



BID PACKAGE

PART V

TECHNICAL SPECIFICATIONS

**Drainage - Repair & Replacement
CONTRACT NO. P26-3670-C1A**

ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND MANHOLES, (EXCLUDING COST OF CASTINGS) (VF)

DESCRIPTION

The Engineer is encouraged to report structures in need of cleaning to the DCR Stormwater Manager, so that cleaning can be coordinated and executed, by DCR Stormwater staff **BEFORE** structural repairs are undertaken using this contract. **If this coordination is not possible, the structure to be repaired shall be cleaned of existing sand, sediment, silt and debris, under other items in this Contract pertaining specifically to sediment/debris cleaning.**

Where indicated in the listing of structures under the Special Provisions, or as directed by the Engineer, catch basins and manholes will be rebuilt in various cities and towns throughout the Division of Urban Parks and Recreation. This work will involve the pavement being sawcut, edge-stone/curbing removal and resetting (if applicable), pavement and soil excavated, frames and covers or grates removed. Under this item, the manhole or catch basin structure will be rebuilt by removing all deteriorated material. The extent of this deterioration is to be determined by field inspection, and is subject to the judgment of the Engineer.

Upon completion of structural repairs, any/all structures repaired under this Item are to be cleaned of all masonry debris dropped into the structure during structural repairs (brick/block/mortar/sand/etc.). The contractor must consider any expense associated with this debris removal when calculating the unit price of this Item.

The frame and cover/grate will be reset under this item, unless the condition of the frame and cover/grate warrant replacement. Broken or unusable frames, grates or covers shall be disposed of off of DCR property

All existing steel plates that are serving as covers over structures are the property of the DCR. The Contractor shall coordinate the removal of these plates with the Resident Engineer and the DCR Central Services Division, and the Contractor will transport plates to the nearest DCR storage facility.

The Contractor's attention is directed to the details listed below which summarize some of the types of work considered included in this Item.

*Sawcutting: Where existing bituminous concrete is to be excavated, the surrounding pavement shall be cut with a pavement saw or other mechanical means to the satisfaction of the Engineer. Prior to sawcutting, the depth of repair should be estimated so that the area of removed pavement will be large enough to permit a 1:4(1h:4v) trench slope to help guard against soil collapse, and 12" of work space on the outside of the lowest course of bricks to be repaired. The sawcuts will be made along neat lines to the satisfaction of the Engineer.

ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND MANHOLES, (EXCLUDING COST OF CASTINGS) (cont.) (VF)

*Edge Stone R & R: The edge stone shall be reset to the required line and grade on a gravel foundation. The excavation will be 24" deep, and the gravel foundation will be placed in 6" lift(s) and mechanically compacted prior to resetting the edge stone. The joints will be made as close as possible, and the spaces under the edge stone will be thoroughly filled with gravel and tamped so that the entire length of the stone will bear evenly on the foundation.

*Unclassified Excavation: The excavation of existing pavement and soils to allow for the rebuilding a drainage structure, or the proper resetting of an edge stone, will be considered incidental to the rebuilding process, and is a part of this item. If the removed soils are considered suitable by the Engineer, they should be used as fill material around the rebuilt structure. Any suitable material that is not used as backfill, and all unsuitable material, will be considered waste and shall be disposed of by the Contractor outside the Right-of-Way at his responsibility and expense, unless otherwise directed.

*Gravel Borrow: In the opinion of the Engineer, if there is not sufficient suitable gravel borrow available within the limits of the work, the Contractor shall provide such gravel borrow as may be necessary from outside the location. The gravel may be used as a subbase material for parkways, sidewalks and driveways, and as backfill around pipes and drainage structures. Gravel borrow shall be composed of hard, durable stones and coarse sand free from loam, clay, surface coatings and deleterious materials. All gravel borrow will be placed in 6" lifts (or less) and mechanically compacted. The gravel shall be graded to the proper elevation, so that when bituminous concrete is placed in even layer(s) of 2" (1-1/2" after compacting), the existing pavement blends smoothly with the new pavement.

Gradation requirements for gravel shall be determined by AASHTO T-11 and T-27 and shall conform to the following:

<u>Sieve</u>	<u>Percent Passing</u>
½ inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-10

Maximum size of stone in gravel shall be 3" in the largest dimension.

ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND MANHOLES, (EXCLUDING COST OF CASTINGS) (cont.) (VF)

*Concrete Collars & Cement Concrete In Front of Edge Stone: Concrete encasement of catch basin and manhole frames rebuilt to grade, and cement concrete in front of edge stone, shall include furnishing and placing a 3,000 psi, high-early cement concrete collar to a minimum depth of six (6) inches. The cement concrete shall be placed to within 1-1/2" of the finished roadway surface, to a minimum thickness of six (6) inches. Curing compound, or other method, approved by the Engineer may be used. (See M.D.C. Portland Cement Concrete Specs.)

***Bituminous Tack Coat & Bituminous Concrete:**

Bituminous concrete mixtures shall only be placed in the work when they can be efficiently and satisfactorily placed by the methods described herein. The mixtures shall be placed and compacted at times that allow for proper inspection and checking by the Engineer. The densities of the completed pavement shall not be less than 95% of the density obtained from laboratory compaction of a mixture composed of the same materials in like proportions. The Engineer shall have the final authority for selecting the use of bituminous concrete Type I-1 or Type I-1 Modified Top Course to resurface any deteriorated bituminous concrete roadway surfaces.

Bituminous tack coat will be furnished and applied to all cement concrete and pavement to be resurfaced. The vertical sawcut areas will need to be coated with tack as well, to help create a bond between the existing and new pavements. The contact surfaces of manholes, catch basins or other appurtenant structures in pavement shall be painted with a thin, uniform coating of bitumen just before any mixture is placed against them. The tack coat shall conform to AASHTO-M 140 and shall be uniformly applied at a rate of one twentieth (1/20) gallon per square yard. Immediately after the resurfacing area has been cleaned of all loose material, debris, oil, grease or other foreign matter, and the tack coat has been applied, the bituminous concrete patch is to be placed. All edges and joints that will have new bituminous material placed against them shall be uniformly coated with rubberized asphalt. The new mix shall be carefully raked against the joint, before thoroughly tamping and rolling.

The base and surface courses shall each be placed in 2" lifts, and compacted to a thickness of 1-1/2" by a mechanical compactor, or placed to a grade and contour approved by the Engineer. The rolling of the sub-base, base course and surface course shall be done by a means of a self-propelled equally balanced tandem roller weighing between 1-1/2 and 5 tons, or a machine approved by the Engineer. Around obstructions and other places inaccessible to the roller the mix shall be thoroughly tamped to the same grade as the rolled surface. Such tampers shall not weigh less than 25 pounds and shall have a tamping surface of not more than 50 square inches. Above concrete collars, bituminous concrete shall be a minimum of 1-1/2" thick after compaction. After rolling and compacting, the new pavement shall blend in with the existing without any visible joints.

ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND MANHOLES, (EXCLUDING COST OF CASTINGS) (cont.) (VF)

When, in the Engineer's judgement, a surface upon which new bituminous concrete is to be placed contains unsatisfactory irregularities, such irregularities shall be eliminated by placing and compacting an adequate quantity of mixture so as to furnish a surface with true contour and grade before placing subsequent courses. When testing with a 10 foot straight-edge placed parallel to the center line of the surface course, there shall be no deviation from a true surface in excess of one-quarter $\frac{1}{4}$ " of an inch.

If, at any time before the acceptance of the work, any soft or imperfect spots develop in the surface, these places shall be removed and replaced with new material. All such removal and replacement of unsatisfactory pavement shall be done by the Contractor without additional compensation. If during construction, it is found that the spreading and finishing equipment in use leaves tracks or produces other permanent blemishes in the pavement which are not satisfactory, the Contractor shall provide different, more effective finishing equipment.

The bituminous mixture shall be delivered to the work site in such condition that it is easily workable and can be efficiently laid by standard practices. During the transportation of the mixture from the plant to the work site each load shall be completely covered at all times, without exception, with canvas or other suitable material of sufficient size and thickness to furnish complete protection. The mixture shall not be transported such a distance that segregation of the ingredients takes place, or that any crust forms on the top, bottom or sides which will not crumble or flatten out when the mixture is dumped.

The construction of bituminous concrete pavement shall end on November 15th and shall not resume prior to April 1st, except as determined and directed in writing by the Engineer. These exceptions should be based on necessity and emergency of attendant conditions, weather conditions and the location of project. When the air temperature falls below 50° F., extra precautions shall be taken in drying the aggregates, controlling the temperatures of materials and placing and compacting the mixtures. When necessary, proper insulation of the vehicles transporting the mixture shall be required to insure that the mixture is delivered for placing at the proper temperature.

No mixture shall be placed when the air temperature in the shade and away from artificial heat is 40° F., or less, nor when material on which the mixture is to be placed contains frost. The mixtures shall be placed only upon approved clean and dry surfaces and when weather conditions are suitable. The Engineer may, at the Contractor's responsibility, permit work to continue when overtaken by sudden rain. The amount of material placed after permission is granted is limited to the material that is in transit at that time. Said mixture can only be placed when the temperature of the mixture is within the temperature limits specified, and the roadway surface is not excessively wet.

ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND MANHOLES, (EXCLUDING COST OF CASTINGS) (cont.) (VF)

MATERIALS (NOTE: Cement concrete "bricks", NOT PERMITTED**)**

Mortar shall be composed of portland cement, hydrated lime, and sand in which the volume of sand shall not exceed three times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 for dense hard-burned brick to 1:3/4 for softer brick. In general, mortar for Grade SS Brick shall be mixed in the volume proportions of 1:1/2:4-1/2; portland cement to hydrated lime to sand.

Cement shall be Type II portland cement as specified for concrete masonry.

Hydrated lime shall be Type S conforming to ASTM C207.

The **sand** shall comply with ASTM C144 specifications for "Fine Aggregate," except that all of the sand shall pass a No. 8 sieve.

RED CLAY BRICK:

Only red clay sewer brick, kiln-dried, conforming to the requirements of AASHTO Designation M91 with the following exceptions:

The size of the brick furnished may be any one of the four standard sizes, at the option of the Contractor, but the selected standard size shall be constant throughout the project.

The average of the absorption of five representative samples shall conform to the requirements of ASTM Designation C67.

The average compressive strength of five representative samples shall not be less than 3,000 pounds per square inch, and the compressive strength of any one sample shall not be less than 2,500 pounds per square inch.

Red clay kiln-dried sewer brick shall be machine-made solid segments conforming to the requirements of ASTM-C139, except that the minimum average compressive strength of five representative bricks shall be 3,000 pounds per square inch and the minimum compressive strength of an individual brick shall be 2,500 pounds per square inch. Rejected brick shall be immediately removed from the work and brick satisfactory to the Engineer substituted. Dimensional requirements shall be the same as for clay sewer brick.

**ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND
MANHOLES, (EXCLUDING COST OF CASTINGS) (cont.) (VF)**

MATERIALS (cont.)

CONCRETE BLOCKS:

Concrete blocks shall be machine-made solid segments, conforming to the Requirements of ASTM Designation C139, supplemented by the following requirements:

The blocks shall not be less than six (6) inches in width for basins and manholes of nine (9) feet or less in depth, and not less than eight (8) inches in width below a depth of nine (9) feet, when used in structures having a depth greater than nine (9) feet. The inside and outside surfaces of the blocks shall be cured to the necessary radius and so designated that the interior surfaces of the structure shall be cylindrical, except the top batter courses which shall be designed to reduce uniformly the inside of the structure to the required top size and shape. The blocks used in the top courses shall be designed to produce a surface eight (8) inches in width upon which to seat the frame, and the curb inlet when one is used. Blocks shall be designed so that only full-length units are required to lay any one course.

Blocks shall be sampled and tested in accordance with ASTM Designation C140. Five (5) representative blocks shall be sampled. None of them will have a compressive strength less than 2,500 pounds per square inch.

CONSTRUCTION METHODS

Catch basins and manholes of the various types and depths as listed above shall be built to the lines and grades, dimensions and design shown on the plans and as directed with the necessary frames, grates, covers, iron steps, etc. and in accordance with these Specifications.

Catch basins and manholes to be rebuilt shall have all deteriorated brick and/ or concrete block removed to the grades established by the Engineer. The casting and deteriorated masonry shall be removed in a neat manner until a clean sound base is obtained upon which concrete blocks and clay bricks may be set to rebuild the structure.

All deteriorated bricks, concrete blocks and unsuitable material shall become the property of the Contractor and shall be disposed of off of DCR property and away from the project limits as directed by the Engineer.

The red clay brick and concrete blocks shall be wetted as necessary before laying.

ITEM 001-010: REBUILDING OF DETERIORATED CATCH BASINS AND MANHOLES, (EXCLUDING COST OF CASTINGS) (cont.) (VF)

BRICK: All joints in brick shall be thoroughly flushed full of mortar and no joint on the inside face shall be greater than one quarter (1/4 ") inch. After the bricks are laid, the joints shall be pointed on the inside. After pointing the joints, the inside and outside of the brickwork shall be coated with a one half (1/2 ") inch thick mortar coat.

BLOCK: As concrete block courses are laid, the horizontal and vertical keyways shall be flushed full with mortar. Plastering of the outside of block structures will not be required. The floors of structures shall be filled with brick chips and mortar, cement concrete, or left open, as directed.

Frame castings for each catch basin shall be set in full beds of mortar, true to lines and grades as directed.

Suitable materials obtained from the excavation, or from borrow, shall be placed between the outside of the structure and the limits of excavation. The fill is to be uniformly distributed in successive layers not to exceed six (6) inches in depth, and thoroughly mechanically compacted. If permission is given by the Engineer, use of iron hand-tampers having a tamping face not exceeding twenty-five square inches may be allowed.

All excavated material that remains after back-filling operations are complete, must be legally disposed of off of DCR property, at no additional compensation.

METHOD OF MEASUREMENT

The basis for establishing the depth of repair will be the elevation of the road surface. Measurement for the quantity of vertical feet repaired will be made to the nearest hundredth of a vertical foot, and the quantity of this item will be the total number of vertical feet that are suitably rebuilt and accepted.

BASIS OF PAYMENT

For all drainage structure rebuilding, payment will be made to the nearest hundredth of a vertical foot, based on the contract unit price per vertical foot of deteriorated drainage structure repaired. The price of Item 001-010 shall include sawcutting, removal and resetting of the casting, edge stone removal and resetting, unclassified excavation, fine grading, and furnishing and installing red clay brick, removal and disposal of all masonry debris dropped into the structure during structural repairs (brick/block/mortar/sand/etc.), cement concrete block, gravel borrow, concrete collars, cement concrete in front of edge stone, bituminous tack coat and bituminous concrete, and any other necessary equipment and materials necessary to complete the work to the satisfaction of the Engineer

DCR (Division of Urban Parks and Recreation)
PORTLAND CEMENT CONCRETE

The following table of minimum cement contents is based on air-entrained and water-reduced mixtures. Various minimum 28-day compressive strengths (6" x 12" cylinder) are compared. The use of an additive other than air-entraining and water-reducing additives shall not affect the minimum cement content.

The Contractor shall submit to the Engineer, for approval, his choice of concrete supplier, the concrete mix design from an approved laboratory with trial mix data, and sources and types of materials with current ASTM C-33 aggregate data. Trial mixtures will be dependent on the minimum allowable slump and air content for each designated class of concrete.

Minimum 28 day Compressive Strength (psi)	Minimum Cement (Pounds/ Cu. Yd.) Max. Size Aggregate (Inches)			In Place Slump (Inches)
	<u>1 1/2</u>	<u>3/4</u>	<u>3/8</u>	_____
2000	376	423	470	3-5
2500	423	470	517	3-5
3000	470	517	564	3-5
3500	517	564	611	3-5
4000	564	611	658	3-5
4500	611	658	705	3-5
5000	658	705	752	3-5
Air Content % +/- 1	5.0	6.0	7.5	

All concrete for sidewalks shall have a minimum compressive strength of 4,000 psi and shall contain 6% +/- 1% entrained air.

All concrete exposed to sea water shall have a minimum compressive strength of 4,500 psi and shall contain 6% +/- 1% entrained air.

Plant-mixed cement concrete shall be the only concrete allowed to be used with all items requiring cement concrete in this contract. Hand-mixing or other types of mixing will not be permitted.

PORTLAND CEMENT CONCRETE (continued)

MATERIALS

Portland Cement shall conform to ASTM C150, latest edition. Portland Cement used for concrete shall be the type designated on the plans and/or in the specifications for the particular work. If no type is specified Type II will be furnished.

When high-early strength is required, it shall be attained using Type III cement, or by use of a non-chlorine set accelerator, as approved by the Resident Engineer.

FINE AGGREGATE

Fine aggregate shall consist of sand conforming to the requirements of ASTM C33, Specification for "Concrete Aggregates", latest edition. The fineness modulus of the fine aggregate shall be 2.80 ± 0.20 , and the percent passing the #200 sieve shall not exceed 2% by dry-sieving and 3% by wet-sieving.

COARSE AGGREGATE

Coarse aggregate of washed gravel, crushed gravel, crushed stone or a combination thereof conforming to ASTM C33 Specification for "Concrete Aggregates" latest edition. Aggregate for Lightweight Concrete shall conform to ASTM C33 Specification for "Lightweight Aggregate for Structural Concrete".

WATER

Water for concrete shall be clear and apparently clean and shall not exhibit any deleterious effects upon the required concrete properties.

ADMIXTURES

Air-entraining and water-reducing admixtures will be used in all concrete as specified. They shall be used in strict accordance with the manufacturer's recommendations and added at the batch plant. Admixtures shall be a ready-to-use liquid material, and shall contain no calcium chloride. Superplasticizers may be added at the plant or job site.

AIR-ENTRAINING ADMIXTURES

Air-entraining admixtures shall conform to ASTM C260 Specification for "Air-Entraining Admixtures for Concrete".

WATER-REDUCING ADMIXTURES

Water-reducing admixtures shall conform to ASTM C494 Specification for "Chemical Admixtures for Concrete".

ITEM NO. 001-222: Salt-resistant Coating for Structure Walls (SF)

DESCRIPTION

This Item is intended for a trial use to test it's effectiveness in retarding salts and other chemicals from decaying the integrity of DCR drainage structures. The best drainage structures for the trial use of this Item are structures prone to exposure to salt-water, but the Engineer may use this coating at other locations, at his discretion.

CONSTRUCTION METHODS

The surface shall be clean and free of any contaminants that may inhibit bonding of the salt-resistant coating, subject to the approval of the Engineer, prior to coating application.

If more than one coat is required, adequate curing time shall be given before adding subsequent coat(s).

Individuals performing this work shall use all necessary, OSHA-mandated protection equipment while applying these products, and all recommended safety precautions must be adhered to. The Contractor shall provide a safe "confined-space-entry" environment (gas meter, air blower, NIOSH-approved masks, goggles, etc.).

MATERIALS

The material for this specification must comply with AASHTO Spec M 224-91 (2000): "Use of Protective Sealers for Cement Concrete", Part 4.2 "Sealer Types – Epoxy Resin", or the most recent version of same, and the criteria listed below:

- | | |
|--|-----------------|
| A. Properties of the mixed epoxy resin coating: | |
| 1. Pot Life at 70°F: | 25-40 minutes |
| 2. Tack-free time to touch (4-7 mils): | 3 – 4.5 hours |
| 3. Initial Viscosity
(Brookfield Viscometer,
Spindle #3, Speed 100): | 2,200-3,400 cps |
| 4. Solid: | 100% |

ITEM NO. 001-222: Salt-resistant Coating for Structure Walls (cont.) (SF)

MATERIALS (cont.)

B. Properties of the cured epoxy resin coating:

- | | |
|---|---------------------|
| 1. Total Water Absorption
(ASTM D 570) at 7 days:
(2 hour boil) | 1.5% max |
| 2. Elongation (ASTM D 522)
at 14 days: | 5% minimum |
| 3. Abrasion Resistance
(ASTM D 968) at 14 days: | 401 mils/minute |
| 4. Abrasion (Test Abrader)
at 14 days Weight Loss: | 0.7 gm. Max |
| 5. Adhesion Classification
(ASTM D 3359) at 14 days: | 4A minimum |
| 6. Bond Strength (ASTM C 882) | |
| a. 2 day (dry cure): | 2,000 psi min. |
| b. 14 day (moist cure): | 1,500 psi min. |
| 7. Shrinkage (ASTM C 883): | Passes test minimum |

METHOD OF MEASUREMENT

The Engineer shall use the following formula to calculate the surface area of round drainage structures (all units in feet):

where D = Diameter:

$$D * \pi * \text{Ht. of Coating}$$

or $D * (3.14) * \text{Ht. of Coating}$

For calculating the area of a flared transition with variable diameter, use the average of the largest and smallest diameter coated in that transition section, and substitute that for “D” in the above formula.

BASIS OF PAYMENT

Coating of drainage structures with salt-resistant coating shall be paid by the contract bid price per square foot of surface to be completely coated. **There shall be no allowance made for the application of additional coats, if required. The product shall be applied to the manufacturer’s specifications, and payment shall be made only once for a given area of wall.** This price shall include all labor, materials, shipping costs, transportation costs, equipment maintenance and all other costs associated with applying this coating, to the satisfaction of the Engineer.

In addition, all costs associated with providing a safe, “confined-space-entry” environment (gas meter, air blower, NIOSH-approved masks, goggles, etc.), shall be covered by the accepted bid price of this Item.

ITEM 002-010: FURNISH AND INSTALL FRAMES AND GRATES/COVERS
(EA)

DESCRIPTION

This item shall include the furnishing and installing of new frames, grates and covers to complete the rebuilding of various drainage structures in this contract. The frames, grates, and covers shall be iron castings and shall be installed as shown on the plans, and as directed by the Engineer.

MATERIALS

New iron castings (frames, grates and covers) shall conform to the requirements of AASHTO Designation M105, Class No. 30, Gray Iron Castings, unless otherwise specified. The preferred catch basin frames shall be "D-Frame" style, and the preferred basin grates shall be a two-directional or "grid-pattern" type, and not the "Cascade" style or the one-directional style which is more hazardous to bicyclists. Test bars required shall be Test Bar B 1.20 inches in diameter.

Catch basin curb inlets, gutter inlets, and curb inlets shall conform to "M.D.C. Standard Design" Model 14, Old Style Grate-Drop inlets for three flanges, as manufactured by, Neenah Foundry (Representative Melville Grant Assoc.), Box 175, 83 Chapel Street, Needham, MA 02192 (Drop Inlet Model No. R3405B)
Mechanics Iron Foundry Co., 56 Kemble Street, Roxbury, MA 02119 (Model No. F5051)
E.L. LeBaron Foundry Co., Box 746, 14E Union Street, Brockton, MA 02403 (Model No. LD 268-1)
C.M. White Iron Works, Inc., 62 Concord Street, North Reading, MA (Model No. S421)
 or an approved equal.

Catch basin castings shall conform to "M.D.C. Standard Design" No. 14 Old Style Grate-Drop inlet for four flanges, as manufactured by,
 Neenah Foundry (Drop Inlet Model No. R3405A),
 Mechanics Iron Foundry (Model No. F5051 *special),
 E.L. LeBaron (Model No. LBM 266)
 C.M. White Iron Works (Model No. S421)
 or an approved equal.

Manhole castings shall conform to "M.D.C. Standard Design" No. S.M.D.C. Standard Manhole Frame and Cover, as manufactured by,
 Neenah Foundry (Model No. R-1720),
 Mechanics Iron Foundry (Model No. B-3030),
 E.L. LeBaron (Model No. LBF 268-2)
 C.M. White Iron Works (Model No. Mass. Standard M.D.C. No. 5)
 or an approved equal.

ITEM 002-010: FURNISH AND INSTALL FRAMES
AND GRATES/COVERS (cont.) (EA)

CONSTRUCTION METHODS

Frame castings for catch basins and manholes shall be set in full beds of mortar, true to lines and grades as directed. The Contractor shall take adequate elevation readings of the pavement surfaces on all sides of the structure being rebuilt so that the frame and grate/cover is set to create a flush wearing surface.

BASIS OF PAYMENT

Furnishing and installing of new frames, grates and covers will be paid for at the contract unit price as listed in the Proposal. Payment shall include full compensation for all materials, transporting, protecting and installing the frame, grate and/or cover, and for all equipment, tools and labor incidental thereto.

ITEM 002-222: FURNISH AND INSTALL GRATE or COVER (ONLY) (EA)

DESCRIPTION

This item shall include the furnishing and installing of new catchbasin grates or manhole covers to replace broken grates or covers found during the course of the work. The grates and covers shall be iron castings and shall be installed as directed by the Engineer.

MATERIALS

New iron castings (grates and covers) shall conform to the requirements of AASHTO Designation M105, Class No. 30, Gray Iron Castings, unless otherwise specified. The preferred basin grates shall be a two-directional or “grid-pattern” type, and not the “Cascade” style or the one-directional style which is more hazardous to bicyclists. Test bars required shall be Test Bar B 1.20 inches in diameter.

Catch basin curb inlets, gutter inlets, and curb inlets shall conform to “M.D.C. Standard Design” Model 14, Old Style Grate-Drop inlets for three flanges, as manufactured by, Neenah Foundry (Representative Melville Grant Assoc.), Box 175, 83 Chapel Street, Needham, MA 02192 (Drop Inlet Model No. R3405B)

Mechanics Iron Foundry Co., 56 Kemble Street, Roxbury, MA 02119
(Model No. F5051)

E.L. LeBaron Foundry Co., Box 746, 14E Union Street, Brockton, MA 02403
(Model No. LD 268-1)

C.M. White Iron Works, Inc., 62 Concord Street, North Reading, MA
(Model No. S421)

or an approved equal.

Catch basin castings shall conform to “M.D.C. Standard Design” No. 14 Old Style Grate-Drop inlet for four flanges, as manufactured by,

Neenah Foundry (Drop Inlet Model No. R3405A),
Mechanics Iron Foundry (Model No. F5051 *special),

E.L. LeBaron (Model No. LBM 266)

C.M. White Iron Works (Model No. S421)

or an approved equal.

Manhole castings shall conform to “M.D.C. Standard Design” No. S.M.D.C. Standard Manhole Cover, as manufactured by,

Neenah Foundry (Model No. R-1720),

Mechanics Iron Foundry (Model No. B-3030),

E.L. LeBaron (Model No. LBF 268-2)

C.M. White Iron Works (Model No. Mass. Standard M.D.C. No. 5)

or an approved equal.

ITEM 002-222: FURNISH AND INSTALL GRATE or COVER (ONLY) (cont.)
(EA)

BASIS OF PAYMENT

Furnishing and installing of new grates or covers will be paid for at the contract unit price as listed in the Proposal. Payment shall include full compensation for all materials, transporting, protecting and installing the grate and/or cover, and for all equipment, tools and labor incidental thereto.

ITEM 002-555: FURNISH AND INSTALL BRIDGE SCUPPER
GRATE (ONLY)

(POUND)

DESCRIPTION

This item shall include the furnishing and installing of new bridge scupper grates to replace broken grates found during the course of the work. The grates shall be iron castings and shall be installed as directed by the Engineer.

This Item shall be utilized if the scupper grates currently in storage at the DCR Lower Basin (Cambridge) facility DO NOT MATCH the grate needing replacement. The grates in storage at the Lower Basin Yard match the standard detail # SD-001-01 (attached), and measure 20-3/4”L x 20-3/4”W x 3” deep.

MATERIALS

New cast iron bridge scupper grates shall conform to the requirements of AASHTO Designation M105, Class No. 30, Gray Iron Castings, unless otherwise specified. The preferred bridge scupper grates shall be a two-directional or “grid-pattern” type, and **not** the one-directional style which is more hazardous to bicyclists.

BASIS OF PAYMENT

Furnishing and installing of new scupper grates or covers will be paid for at the contract unit price per pound for this Item. Payment shall include full compensation for all materials, transporting, protecting and installing the grate, and for all equipment, tools and labor incidental thereto.

ITEM 002-555: FURNISH AND INSTALL BRIDGE SCUPPER
GRATE (ONLY)

(POUND)

DESCRIPTION

This item shall include the furnishing and installing of new bridge scupper grates to replace broken grates found during the course of the work. The grates shall be iron castings and shall be installed as directed by the Engineer.

This Item shall be utilized if the scupper grates currently in storage at the DCR Lower Basin (Cambridge) facility DO NOT MATCH the grate needing replacement. The grates in storage at the Lower Basin Yard match the standard detail # SD-001-01 (attached), and measure 20-3/4”L x 20-3/4”W x 3” deep.

MATERIALS

New cast iron bridge scupper grates shall conform to the requirements of AASHTO Designation M105, Class No. 30, Gray Iron Castings, unless otherwise specified. The preferred bridge scupper grates shall be a two-directional or “grid-pattern” type, and **not** the one-directional style which is more hazardous to bicyclists.

BASIS OF PAYMENT

Furnishing and installing of new scupper grates or covers will be paid for at the contract unit price per pound for this Item. Payment shall include full compensation for all materials, transporting, protecting and installing the grate, and for all equipment, tools and labor incidental thereto.

Item 003-444 Oil/Grit Separator - (Stormceptor CT450i or equal) (EA)

This Section covers Oil/Grit Separator – (Stormceptor CT450i or equal), including, but not limited to, inverts, frames and covers. Oil/Grit Separator shall conform to all applicable specifications for precast units contained herein including but not limited to finish, compressive strength and steel reinforcement requirements.

DESCRIPTION:

Stormceptor is a prefabricated, underground unit that separates oils, grease, and sediment from stormwater runoff when installed with an existing or new pipe conveyance system. The unit is divided into two chambers—a treatment and a flow bypass chamber. During typical storm events, runoff is directed by the inflow weir through a drop pipe into the lower treatment chamber where sediment, oil, and grease are separated from the flow by gravity. The bypass chamber is designed to convey excess stormwater, which overtops the inflow weir, through the system without treatment.

A. Installation:

The installation of the concrete Stormceptor should conform in general to state highway, or local specifications for the installation of manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

B. Excavation:

Excavation for the installation of the Stormceptor should conform to state highway, or local specifications. Topsoil removed during the excavation for the Stormceptor should be stockpiled in designated areas and should not be mixed with subsoil or other materials. Topsoil stockpiles and the general site preparation for the installation of the Stormceptor should conform to state highway or local specifications. The Stormceptor should not be installed on frozen ground. Excavation should extend a minimum of 12 inches (300 mm) from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required. In areas with a high water table, continuous dewatering may be required to ensure that the excavation is stable and free of water.

C. Backfilling

Backfill material should conform to state highway or local specifications. Backfill material should be placed in uniform layers not exceeding 12 inches (300mm) in depth and compacted to state highway or local specifications.

Item 003-444 Oil/Grit Separator - (Stormceptor CT450i or equal) (EA)

D. Installation Depth Minimum Cover:

The minimum distance from the top of grade to the crown of the inlet pipe is 24 inches (600 mm). For situations that have a lower minimum distance, contact your local Stormceptor representative.

E. Stormceptor Construction Sequence:

The concrete Stormceptor is installed in sections in the following sequence:

1. Aggregate base
2. Base slab
3. Lower chamber sections
4. Upper chamber section with fiberglass insert
5. Connect inlet and outlet pipes
6. Assembly of fiberglass insert components (drop tee, riser pipe, oil cleanout port and orifice plate)
7. Remainder of upper chamber
8. Frame and access cover The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.

Adjustment of the Stormceptor can be performed by lifting the upper sections free of the excavated area, re-leveling the base and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the Stormceptor has been constructed, any lift holes must be plugged with mortar.

FRAMES, GRATES, COVERS AND STEPS:

** *Many types of castings are mentioned below. The catchbasin grate shall typically be a D-Frame shape grate, but the choice of casting type shall be left to the Engineer to allow for the most effective casting in any of the various scenarios that may be encountered in the field. ***

- A. Castings shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sandholes, and defects of every nature which would render them unfit for the service for which they are intended. Contact surfaces of covers and frame seats shall be machined to prevent rocking of covers.

Item 003-444 Oil/Grit Separator - (Stormceptor CT450i or equal) (EA)

- B. All castings shall be thoroughly cleaned and may be subject to a careful hammer inspection at the Engineer's discretion.
- C. Castings shall be ASTM A48 Class 30B or better.
- D. The surface of the manhole covers shall have a diamond pattern with the cast words "WATER," "DRAIN" or "SEWER," whichever is appropriate.
- E. Manhole frames with 32-inch covers for 30-inch openings shall be 500 pounds minimum by E.L. LeBaron Foundry Co., No. LC328; Quality Water Products, Style 47; Neenah Foundry Co., R1740B or approved equal.
- F. Watertight type manhole frames with 32-inch diameter covers (bolted and gasketed) shall be 4 bolt, 630 pounds minimum by E.L. LeBaron Foundry Co. No. LCB328; Quality Water Products, Style C47WT; Neenah Foundry Co., R-17550-H or approved equal.
- G. Manhole frames with 26-inch covers for 24-inch openings shall be 475 pounds minimum by E.L. LeBaron Foundry Co., No. LK110; Neenah Foundry Co. R1720; Quality Water Products, Style 40; or approved equal.
- H. Watertight type manhole frames with 26-inch diameter covers (bolted and gasketed) shall be 4 bolt, 475 pounds minimum, and shall be E.L. LeBaron Foundry Co. No. LBB268; Mechanics Iron Foundry Type A2073; Quality Water Products, Style 40WT; or approved equal.
- I. Frostproof manhole frames, with covers and inner lids shall be R-1758 series by Neenah Foundry Co., Neenah, WI; LBF series by E.L. LeBaron Foundry Co., Brockton, MA; B-3045 (or similar) by Mechanics Iron Foundry, Boston, MA; or approved equal.
- J. 2-inch thick polystyrene insulation shall be firmly adhered to all frostproof inner lids.
- K. Catch basin frames with 2-inch square openings and 23-7/8-inch square grates shall be 8-inches in height and 460 pounds minimum. They shall be Neenah Foundry Co. No. 3405; Quality Water Products No. 45; E.L. LeBaron Type F; or approved equal.
- L. Catch basin frames with 'D' frame shape with 2 ft. wide opening shall be 8-inches in height and 460 pounds minimum. . They shall be Neenah Foundry Co. No. R-3589; Quality Water Products No. 45; E.L. LeBaron LK121; or approved equal.
- N. Catch basin frames set against curbing shall have three flanges only.

Item 003-444 Oil/Grit Separator - (Stormceptor CT450i or equal) (EA)

- O. Manhole steps shall conform to ASTM C478 requirements and shall be fabricated of either extruded aluminum or steel reinforced plastic. Steps shall be uniformly spaced at a maximum of 12-inches unless otherwise shown on the drawings.
- P. All new catchbasins shall be equipped with **cast-iron hoods** designed to maximize the likelihood of retaining oil, gasoline, debris, and all contaminants less dense than water, IN the catchbasin and NOT flow freely downstream during heavy rain events.

LEAKAGE TESTS:

- A. Leakage tests shall be made by the Contractor and observed by the Engineer on each manhole. The test shall be by vacuum or by water exfiltration as described below:
- B. VACUUM TEST:
 - 1. The vacuum test shall be conducted in accordance with ASTM C1244. Test results will be judged by the length of time it takes for the applied vacuum to drop from 10 inches of mercury to 9 inches. If the time is less than that listed in Table 1 of ASTM C1244, the manhole will have failed the test. Test times from Table 1 are excerpted below.

TABLE 1

Minimum Test Times for Various Manhole Diameters

<u>Depth (Feet)</u>	<u>Diameter (Inches)</u>		
	48	60	72
<u>Times (Seconds)</u>			
0-12	30	39	49
12-16	40	52	67
16-20	50	65	81
20-24	59	78	97

Item 003-444 Oil/Grit Separator - (Stormceptor CT450i or equal) (EA)

26-30

74

98

121

2. If the manhole fails the initial test, the Contractor shall locate the leaks and make proper repairs. Leaks may be filled with a wet slurry of accepted quick setting material. If the manhole should again fail the vacuum test, additional repairs shall be made, and the manhole water tested as specified below.

C. WATER EXFILTRATION TEST:

1. After the manhole has been assembled in place, all lifting holes shall be filled and pointed with an approved non-shrinking mortar. All pipes and other openings into the manhole shall be suitably plugged and the plugs braced to prevent blow out. The test shall be made prior to placing the shelf and invert. If the groundwater table has been allowed to rise above the bottom of the manhole, it shall be lowered for the duration of the test.
2. The manhole shall be filled with water to the top of the cone section. If the excavation has not been backfilled and observation indicates no visible leakage, that is, no water visibly moving down the surface of the manhole, the manhole may be considered to be satisfactorily watertight. If the test, as described above, is unsatisfactory as determined by the Engineer or if the manhole excavation has been backfilled, the test shall be continued. A period of time may be permitted if the Contractor so wishes, to allow for absorption by the manhole. At the end of this period, the manhole shall be refilled to the top of the cone, if necessary, and a measuring time of at least 8 hours begun. At the end of the test period, the manhole shall be refilled to the top of the cone, measuring the volume of water added. This amount shall be extrapolated to a 24-hour loss rate and the leakage determined on the basis of depth. The leakage for each manhole shall not exceed one gallon per vertical foot for a 24-hour period. If the manhole fails this requirement, but the leakage does not exceed 3 gallons per vertical foot per day, repairs by approved methods may be made as directed by the Engineer to bring the leakage within the allowable rate of one gallon per foot per day. Leakage due to a defective section or joint or exceeding the 3 gallon per vertical foot per day, shall be cause for rejection of the manhole. It shall be the Contractor's responsibility to uncover the rejected manhole as necessary and to disassemble, reconstruct or replace it as directed by the Engineer. The manhole shall then be retested and, if satisfactory, interior joints shall be filled and pointed.
3. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorption, etc. It shall be assumed that all loss of water during the test is a result of leaks through joints or through the concrete. Furthermore, the Contractor shall take any steps necessary to assure the Engineer that the water table is below the bottom of the manhole throughout the test.

(cont.)

4. If the groundwater table is above the highest joint in the manhole, and there is no leakage into the manhole, as determined by the Engineer, such a test can serve to evaluate water-tightness of the manhole. However, if the Engineer is not satisfied with the results, the Contractor shall lower the water table and carry out the test as described hereinbefore.

Item 003-444 Oil/Grit Separator - (Stormceptor CT450i or equal) (EA)

CLEANING:

- A. All new manholes shall be thoroughly cleaned of all silt, debris and foreign matter of any kind, prior to final inspection.

BASIS OF PAYMENT:

For Item 004-111, Oil/Grit Separator - (Stormceptor CT450i or equal)", payment will be made for **EACH**, based on the contract unit price for that particular Item. The bid price shall include all sawcutting, edge stone removal and resetting, unclassified excavation, fine-grading, compaction, joint-mortaring, and furnishing and installing red clay brick, crushed stone, cement concrete block, gravel borrow, concrete collars, cement concrete in front of edge stone, bituminous tack coat and bituminous concrete.

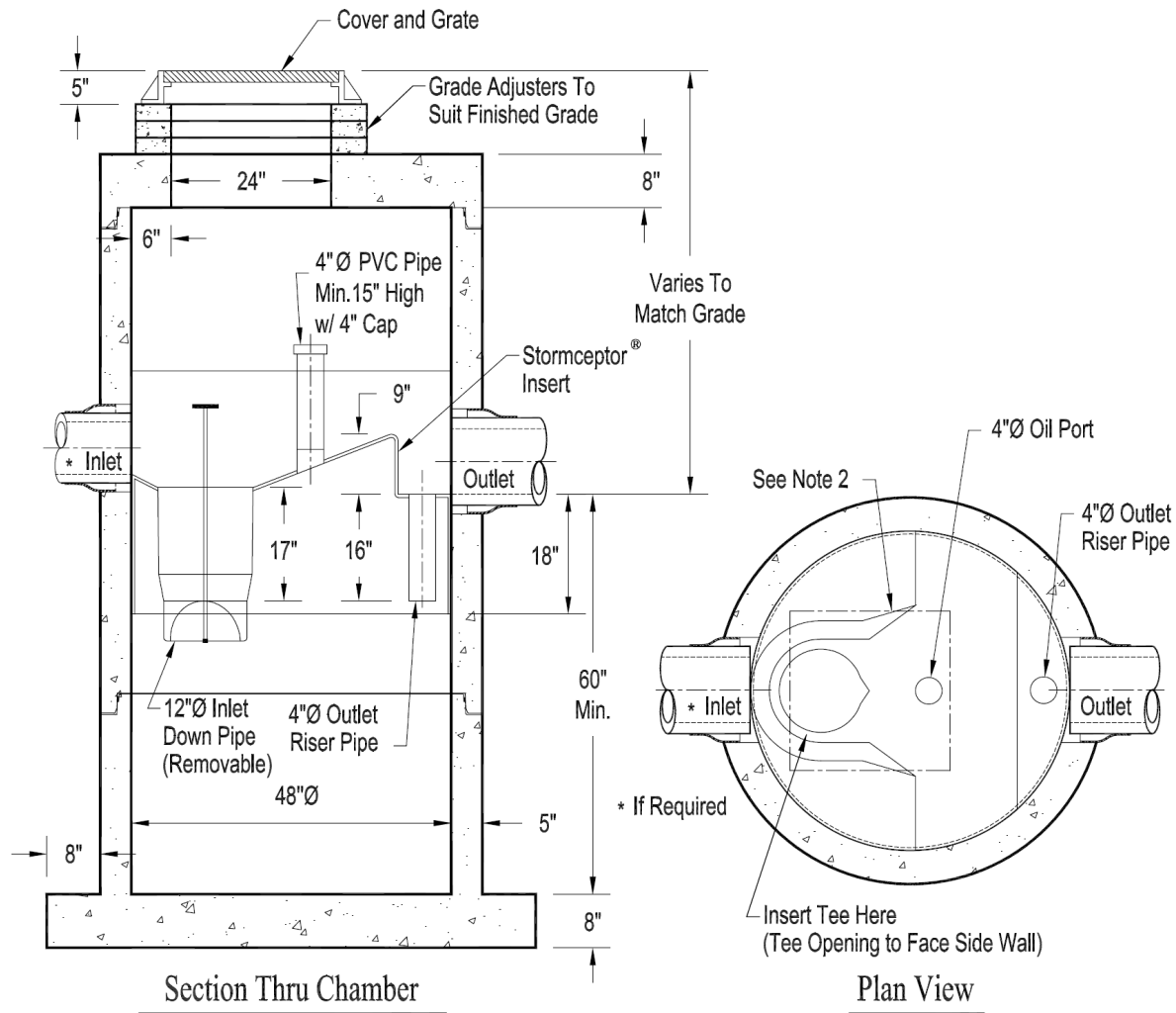
Excavation Limit for Item 004-111:

For Item 004-111, Oil/Grit Separator - (Stormceptor CT450i or equal) the amount of excavation around the structure that will be considered incidental to the item and included in the unit price of 004-111 is one foot (1'). If the DCR Resident Engineer deems that additional excavation (**between one-foot and a maximum of two-feet from the structure**) is necessary for proper installation of the structure, then the volume of that additional excavation shall be paid for using Item 010-010, "Unclassified Excavation".

For Item 004-111, Oil/Grit Separator - (Stormceptor CT450i or equal) Precast Concrete Catchbasin/Manhole, Complete, including Casting", the cost of furnishing and installing any necessary casting (frame and grate or cover) shall also be covered by the accepted, bid unit-price for Item 004-111.

The cost of haybales and sedimentation fence shall be addressed by separate specifications in this Contract (Items 010-222 and 010-333).

STC 450i Precast Concrete Stormceptor® (450 U.S. Gallon Capacity)



Notes:

1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
2. The Cover Should be Positioned Over The Inlet Drop Pipe and The Oil Port.
3. The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

<u>ITEM NO. 004-001 HDPE N12 – WT Drain Pipe</u> <u>(6" to 12"), Furnished & Installed</u>	<u>(LF)</u>
<u>ITEM NO. 004-002 HDPE N12 – WT Drain Pipe</u> <u>(15" to 24"), Furnished & Installed</u>	<u>(LF)</u>
<u>ITEM NO. 004-003 HDPE N12 – WT Drain Pipe</u> <u>(30" to 42"), Furnished & Installed</u>	<u>(LF)</u>

DESCRIPTION:

The work under these items consists of furnishing and installing approved **HDPE N12 – WT Drain Pipe** to repair drainage lines, on compacted 6" crushed stone bed, in accordance with these specifications, and as directed by the Engineer. All pipe shall be laid to the lines and grades as shown on the contract plans, or as directed by the Engineer.

All existing drainage lines encountered in the excavation for the construction of proposed drainage pipe or structures shall be removed as necessary to provide a minimum distance of 2 feet between any abandoned existing drainage line and the new proposed drainage pipe or structure. (see Item 006-010, "Drainage Pipe removed and Discarded")

Investigation of Sinkholes, Probable Pipe Breaks, Etc.

(Use of Dye tablets):

At the Engineer's request, the Contractor shall use environmentally safe dye tablets to verify the locations and conditions of pipes, to verify outfall locations, find areas of collapsed pipes, etc.

MATERIALS:

Material for pipe and fitting production shall be high-density polyethylene conforming with the minimum requirements of cell classification 424420C for 4- through 10-inch (100 to 250 mm) diameters, and 435400C for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The 12- through 60-inch (300 to 1500 mm) pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in Sections 9.5 and 5.1 of AASHTO M294 and ASTM F2306 respectively.

PIPE:

ADS N-12 WT IB pipe (per AASHTO) shall have a smooth interior and annular exterior corrugations.

- 4- through 10-inch (100 to 250 mm) pipe shall meet AASHTO M252, Type S.
- 12- through 60-inch (300 to 1500 mm) pipe shall meet AASHTO M294, Type S or ASTM F2306.
- Manning's "n" value for use in design shall be 0.012.

JOINT PERFORMANCE:

Pipe shall be joined using a bell & spigot joint meeting the requirements of AASHTO M252, AASHTO M294, or ASTM F2306. The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by

the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have an exterior bell wrap installed by the manufacturer.

FITTINGS:

Fittings shall conform to AASHTO M252, AASHTO M294, or ASTM F2306. Bell and spigot connections shall utilize a welded bell and valley or saddle gasket meeting the watertight joint performance requirements of AASHTO M252, AASHTO M294, or ASTM F2306.

CONSTRUCTION METHODS:

MINIMUM PITCH:

Minimum pitch on drainage pipe shall be one percent (1%). The Contractor shall furnish the Engineer with (relative) elevation shots on the top of the compacted pipe bedding material at intervals of every ten feet (10') maximum, so that a pitch of one percent (1%) or greater can be confirmed. Pipe pitch of less than one percent is acceptable, if first approved by the Engineer.

The Contractor shall clear and grub to the approved limits of construction as necessary under this item. The Contractor shall make every effort not to disturb areas outside of the approved limits of construction. If any areas outside of the limits of construction are disturbed during construction, they shall be returned to their original condition by the Contractor including all grading, liming, fertilizing and seeding at the Contractors own expense.

Existing pavement shall be removed and disposed of before the laying of any proposed pipe.

All proposed pipe shall be laid before the installation of new pavement.

In existing pavement areas proposed for new pipe laying, the Contractor shall saw cut the existing pavement before excavation to ensure good, clean pavement cuts. The Contractor shall saw cut pavements in accordance with the DETAIL SKETCH for trench patching attached to Items 004-010 through 004-031 (Page 53 of these specifications)."

The location of the sawcuts shall be at the edges of trench as shown in the typical details of the contract

The trench for the pipe shall be excavated to the required lines and grades as shown on the contract plans. The dimensions of the trench shall be of sufficient width to permit thorough tamping of the material under and around the pipe. The Contractor shall not receive additional compensation for excavation beyond the limits of work as shown in the typical details of the contract plans unless specifically directed by the Engineer.

The Contractor shall take all necessary precautions to prevent flotation of the pipe in the trench. At all times pipe installation is not in progress, the open ends of the pipe shall be closed with temporary watertight plugs.

Item Numbers 004-001, 004-002 and 004-003 (continued):

CONSTRUCTION METHODS (cont.):

When in the opinion of the engineer, unsuitable materials including muck, must be removed beyond the limits of excavation as detailed in the contract plans, the Contractor shall remove the unsuitable materials to a depth as determined by the Engineer. The excavated unsuitable materials shall be replaced with crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The crushed stone shall be placed in six inch lifts and thoroughly mechanically compacted.

The pipe bedding material shall be crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The minimum compacted depth of crushed stone below the pipe shall be 6 inches; and the crushed stone shall encase the pipe to one-half its height as shown on the Contract Drawings. The trench shall then be backfilled with gravel borrow placed in 6 inch lifts and compacted as herein specified to a depth of 12 inches above the pipe. The remainder of the trench shall be backfilled with suitable material from the excavation as determined by the Engineer, placed in six inch (6") lifts, and compacted as specified above to obtain the required grades.

The bell end of pipe shall be toward the rising grade and each section of pipe shall have a firm bearing throughout its length. Material placed around and over the pipe shall be free of stones larger than three inches (3") in diameter.

All pipe shall be laid under "dry" weather conditions as determined by the Engineer. The Contractor shall use all pumping and dewatering procedures necessary to ensure that all pipe is laid under dry conditions to the satisfaction of the Engineer.

All backfilling shall consist of suitable materials as determined by the Engineer uniformly distributed and thoroughly compacted. When suitable material can not be obtained from excavation, the material shall be replaced with gravel borrow as directed by the Engineer. Ordinary borrow shall be used for mounding over pipes where the minimum cover in landscape areas is less than three feet (3'). All grading and mounding over pipes shall be indicated in the contract plans, or as directed by the Engineer.

Gravel Borrow shall meet the requirements as specified under Item No 011-010, "Gravel Borrow."

Loam Borrow shall be placed on meeting the requirements as specified under Item Number 007-010, "Loam Borrow." The loam borrow shall then be graded and seeded according to the requirements as specified under Item No. 008-010, "Grading, Liming, Fertilizing and Seeding."

(cont.)

Item Numbers 004-001, 004-002 and 004-003 (continued):

SHORING & BRACING OF TRENCHES:

Wherever a trench is to be dug to a depth of five feet or more, that trench shall be sheeted and braced in conformity with the rules and regulations for the prevention of accidents in construction operations pursuant to Section 129A of Chapter 149 of the Massachusetts General Laws. Sheet piling and bracing will be included in the contract bid price for these pipe repairs.

The Contractor shall furnish all labor necessary to assist the Engineer in inspecting the pipe and fittings. The pipe and fittings shall be inspected upon delivery and any materials that do not conform to these specifications shall be rejected and immediately removed from the site by the Contractor.

METHOD OF MEASUREMENT:

All pipe repairs shall be measured in place by the linear foot complete and accepted by the Engineer.

Additional gravel borrow and crushed stone are defined as material placed beyond the limits of excavation at the direction of the Engineer after the removal of unsuitable materials.

Quantities of measure by the truck load method shall be subject to deduction of fifteen (15%) percent to allow for loose bulking of the excavation materials when loaded into trucks.

All additional gravel borrow or crushed stone placed beyond the limits of excavation described herein and at the direction of the Engineer will be measured in units of cubic yards, complete in place, by the cross section method or, only if not feasible, by the truck load subject to a 15% deduction for shrinkage or some other practicable method designated by the Engineer.

Trench excavation for pipe will be included in the contract bid price for the type of pipe.

(cont.)

Item Numbers 004-001, 004-002 and 004-003 (continued):

BASIS OF PAYMENT:

Drainage pipe repair will be paid for at the contract unit price per linear foot under Item No. 004-106, 004-110 & 004-015, listed above complete in place, depending on the size of the pipe repaired, which price shall include furnishing and laying HDPE N12 – WT Drain Pipe, all fittings necessary to make connections between existing and new pipe sections, connections to catch basins or manholes (bricks, mortar, etc.), dye tablets, all necessary clearing and grubbing in the trench areas, and all excavation, gravel borrow, removal and disposal of excess materials off of DCR property, backfilling, compaction, shoring and bracing, dewatering, pumping, and all labor, tools, equipment and all work incidental thereto to lay all pipe to the satisfaction of the Engineer.

Drainage pipe removed will be paid for at the contract unit price per linear foot under Item No. 006-010, "Drainage Pipe Removed and Discarded".

Crushed stone **placed beyond the limits of excavation** described herein and used for the replacement of unsuitable materials will be paid for at the contract unit price per ton under Item No. 005-010, "Crushed Stone".

At the Engineer's discretion, the Contractor may be directed to perform subsurface television investigation. If needed, subsurface television investigation shall be paid from Item Number 009-015, "Subsurface Television Investigation".

ITEM NO. 004-010	10" – 17" DRAINAGE PIPE REPAIR	(LF)
ITEM NO. 004-018	18" – 24" DRAINAGE PIPE REPAIR	(LF)
ITEM NO. 004-025	25" – 30" DRAINAGE PIPE REPAIR	(LF)
ITEM NO. 004-031	31" – 36" DRAINAGE PIPE REPAIR	(LF)

DESCRIPTION

The work under these items consists of furnishing and installing approved **reinforced concrete pipe** to repair drainage lines, on compacted 6" crushed stone bed, in accordance with these specifications, and as directed by the Engineer. All pipe shall be laid to the lines and grades as shown on the contract plans or as directed by the Engineer. The majority of drain pipe replaced or installed under this Contract is anticipated to be is twelve-inch diameter (12") reinforced concrete pipe.

All existing drainage lines encountered in the excavation for the construction of proposed drainage pipe or structures shall be removed as necessary to provide a minimum distance of 2 feet between any abandoned existing drainage line and the new proposed drainage pipe or structure. (see Item 006-010, "Drainage Pipe removed and Discarded")

MATERIALS

Reinforced concrete piping shall conform to ASTM C-76, Class IV, Wall B (circular reinforcement) with bell and spigot or O-ring gasket joints. All pipe 24 inches in diameter or smaller shall be of the bell and spigot type. Pipes larger than 24 inches in diameter, shall have a joint material of an acceptable grade approved for common usage and approved by the Engineer.

Mortar shall be composed of one (1) part, Portland cement and two (2) parts, of sand by volume with sufficient water to form a workable mixture.

CONSTRUCTION METHODS

The Contractor shall clear and grub to the approved limits of construction as necessary under this item. The Contractor shall make every effort not to disturb areas outside of the approved limits of construction. If any areas outside of the limits of construction are disturbed during construction they shall be returned to their original condition by the Contractor including all grading, liming, fertilizing and seeding at the Contractors own expense.

Existing pavement shall be removed and disposed of before the laying of any proposed pipe.

All proposed pipe shall be laid before the installation of new pavement.

In existing pavement areas proposed for new pipe laying, the Contractor shall saw cut the existing pavement before excavation to ensure good, clean pavement cuts. The Contractor shall saw cut pavements in accordance with the DETAIL SKETCH for trench patching attached to this specification."

The location of the sawcuts shall be at the edges of trench as shown in the typical details of the contract

ITEM NO. 004-010	10" – 17" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-018	18" – 24" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-025	25" – 30" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-031	31" – 36" DRAINAGE PIPE REPAIR	(cont.)	(LF)

CONSTRUCTION METHODS (cont.)

The trench for the pipe shall be excavated to the required lines and grades as shown on the contract plans. The dimensions of the trench shall be of sufficient width to permit thorough tamping of the material under and around the pipe. The Contractor shall not receive additional compensation for excavation beyond the limits of work as shown in the typical details of the contract plans unless specifically directed by the Engineer.

When in the opinion of the engineer, unsuitable materials including muck, must be removed beyond the limits of excavation as detailed in the contract plans, the Contractor shall remove the unsuitable materials to a depth as determined by the Engineer. The excavated unsuitable materials shall be replaced with crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The crushed stone shall be placed in six inch lifts and thoroughly mechanically compacted.

The pipe bedding material shall be crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The minimum compacted depth of crushed stone below the pipe shall be 6 inches; and the crushed stone shall encase the pipe to one-half its height as shown on the Contract Drawings. The trench shall then be backfilled with gravel borrow placed in 6 inch lifts and compacted as herein specified to a depth of 12 inches above the pipe. The remainder of the trench shall be backfilled with suitable material from the excavation as determined by the Engineer, placed in 8 inch lifts and compacted as specified above to obtain the required grades.

The bell end of pipe shall be toward the rising grade and each section of pipe shall have a firm bearing throughout its length. Material placed around and over the pipe shall be free of stones larger than three inches (3") in diameter.

All pipe shall be laid under "dry" weather conditions as determined by the Engineer. The Contractor shall use all pumping and dewatering procedures necessary to ensure that all pipe is laid under dry conditions to the satisfaction of the Engineer.

All backfilling shall consist of suitable materials as determined by the Engineer uniformly distributed and thoroughly compacted. When suitable material can not be obtained from excavation, the material shall be replaced with gravel borrow as directed by the Engineer. Ordinary borrow shall be used for mounding over pipes where the minimum cover in landscape areas is less than three feet (3'). All grading and mounding over pipes shall be indicated in the contract plans, or as directed by the Engineer.

Gravel Borrow shall meet the requirements as specified under Item No 011-010, "Gravel Borrow."

ITEM NO. 004-010	10" – 17" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-018	18" – 24" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-025	25" – 30" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-031	31" – 36" DRAINAGE PIPE REPAIR	(cont.)	(LF)

CONSTRUCTION METHODS (Continued)

Loam Borrow shall be placed on meeting the requirements as specified under Item Number 007-010, "Loam Borrow." The loam borrow shall then be graded and seeded according to the requirements as specified under Item No. 008-010, "Grading, Liming, Fertilizing and Seeding."

SHORING & BRACING OF TRENCHES:

Wherever a trench is to be dug to a depth of five feet or more, that trench shall be sheeted and braced in conformity with the rules and regulations for the prevention of accidents in construction operations pursuant to Section 129A of Chapter 149 of the Massachusetts General Laws. Sheetting and bracing will be included in the contract bid price for these pipe repairs.

METHOD OF MEASUREMENT

All pipe repairs shall be measured in place by the linear foot complete and accepted by the Engineer.

Additional gravel borrow and crushed stone are defined as material placed beyond the limits of excavation at the direction of the Engineer after the removal of unsuitable materials.

Quantities of measure by the truck load method shall be subject to deduction of fifteen (15%) percent to allow for loose bulking of the excavation materials when loaded into trucks.

All additional gravel borrow or crushed stone placed beyond the limits of excavation described herein and at the direction of the Engineer will be measured in units of cubic yards, complete in place, by the cross section method or, only if not feasible, by the truck load subject to a 15% deduction for shrinkage or some other practicable method designated by the Engineer.

Trench excavation for pipe will be included in the contract bid price for the type of pipe.

(CONT.)

ITEM NO. 004-010	10" – 17" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-018	18" – 24" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-025	25" – 30" DRAINAGE PIPE REPAIR	(cont.)	(LF)
ITEM NO. 004-031	31" – 36" DRAINAGE PIPE REPAIR	(cont.)	(LF)

Investigation of Sinkholes, Probable Pipe Breaks, Etc.

(Use of Dye tablets):

At the Engineer's request, the Contractor shall use environmentally safe dye tablets to verify the locations and conditions of pipes, to verify outfall locations, find areas of collapsed pipes, etc.

BASIS OF PAYMENT

Drainage pipe repair will be paid for at the contract unit price per linear foot under Item No. 004-010, 004-018, 004-025 & 004-031, listed above complete in place, depending on the size of the pipe repaired, which price shall include furnishing and laying Reinforced Concrete pipe, all fittings necessary to make connections between existing and new pipe sections, connections to catch basins or manholes (bricks, mortar, etc.), the possible use of dye tablets at the Engineer's direction (see paragraph above), all necessary clearing and grubbing in the trench areas, and all excavation, gravel borrow, removal and disposal of excess materials off of DCR property, backfilling, compaction, shoring and bracing, dewatering, pumping, and all labor, tools, equipment and all work incidental thereto to lay all pipe to the satisfaction of the Engineer.

Drainage pipe removed will be paid for at the contract unit price per linear foot under Item No. 006-010, "Drainage Pipe Removed and Discarded".

Crushed stone **placed beyond the limits of excavation** described herein and used for the replacement of unsuitable materials will be paid for at the contract unit price per ton under Item No. 005-010, "Crushed Stone".

At the Engineer's discretion, the Contractor may be directed to perform subsurface television investigation. If needed, subsurface television investigation shall be paid from Item Number 009-015, "Subsurface Television Investigation".

<u>ITEM NO. 004-106 SDR 35 – Sewer & Drain Polyvinyl Chloride (PVC) Pipe</u>	
<u>(4” to 8”), Furnished & Installed</u>	<u>(LF)</u>
<u>ITEM NO. 004-110 SDR 35 – Sewer & Drain Polyvinyl Chloride (PVC) Pipe</u>	
<u>(10” to 12”), Furnished & Installed</u>	<u>(LF)</u>
<u>ITEM NO. 004-115 SDR 35 – Sewer & Drain Polyvinyl Chloride (PVC) Pipe</u>	
<u>(15” to 18”), Furnished & Installed</u>	<u>(LF)</u>

DESCRIPTION:

The work under these items consists of furnishing and installing approved **SDR 35 – Sewer & Drain Polyvinyl Chloride (PVC) pipe** to repair drainage lines, on compacted 6" crushed stone bed, in accordance with these specifications, and as directed by the Engineer. All pipe shall be laid to the lines and grades as shown on the contract plans, or as directed by the Engineer.

All existing drainage lines encountered in the excavation for the construction of proposed drainage pipe or structures shall be removed as necessary to provide a minimum distance of 2 feet between any abandoned existing drainage line and the new proposed drainage pipe or structure. (see Item 006-010, “Drainage Pipe removed and Discarded”)

Investigation of Sinkholes, Probable Pipe Breaks, Etc.

(Use of Dye tablets):

At the Engineer’s request, the Contractor shall use environmentally safe dye tablets to verify the locations and conditions of pipes, to verify outfall locations, find areas of collapsed pipes, etc.

MATERIALS:

The Contractor shall provide the Engineer with documentation showing that any material to be used for these contract Items complies with the required ASTM designations referenced below.

PIPE:

SDR 35 Sewer & Drain Polyvinyl Chloride (PVC) piping shall conform to ASTM D3034 for sizes 4” to 15” diameter, and ASTM F 679 for 18” diameter. Coextruded PVC pipe and fittings using recycled materials and conforming to ASTM Standard specification, designation F1760, may also be used. All pipes shall have a minimum pipe diameter to wall thickness ratio (SDR) of 35 and a minimum pipe stiffness of 46 psi.

FITTINGS:

Fittings shall conform to ASTM 3034-SDR 35. Rubber rings shall conform to ASTM D 3212. All fittings shall be compatible to the pipe to which they are attached.

PVC RESIN COMPOUND:

PVC Resin Compound shall conform to ASTM D 1784

(cont.)

Item Numbers 004-106, 004-110 and 004-115 (continued):

MATERIALS (cont.):

GASKETS:

Rubber gaskets shall conform to ASTM-D 3212 and ASTM F 477, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals. The joints shall be gasketed, bell-and-spigot, push-on type. Design of push-on joints varies by the manufacturer, so gaskets shall be part of a complete pipe section and purchased as such. Gaskets may be factory-installed or field-installed, as recommended by the manufacturer and approved by the Engineer. Lubricant shall be as recommended by the manufacturer and approved by the Engineer. Gaskets shall be made of a composition and texture, which is resistant to common ingredients of sewerage and industrial wastes, including, oils and ground water and which will endure permanently under the conditions of its proposed use.

(continued)

Wye branches shall conform to the specifications referenced above for pipe material. Pipe and fittings shall have bell and spigot (push on) joints using elastomeric ring gaskets.

The Contractor shall furnish all labor necessary to assist the Engineer in inspecting the pipe and fittings. The pipe and fittings shall be inspected upon delivery and any which does not conform to the above specifications shall be rejected and immediately removed from the site by the Contractor.

Any mortar used shall be composed of one (1) part, Portland cement and two (2) parts, of sand by volume with sufficient water to form a workable mixture.

CONSTRUCTION METHODS:

EMBEDMENT REQUIREMENTS:

The method for calculating loads and determining embedment requirements for PVC pipe shall be in accordance with the latest published edition of one of the following:

- Section 12 of AASHTO, "LRFD Bridge Design Specifications"
- ASCE Manual No. 60 / WPCF Manual FD-5, "Gravity Sanitary Sewer Pipe Design and Construction."
- The Handbook of PVC Pipe, Design and Installation available from the Uni-Bell PVC Pipe Association
- UNI-TR-1, "Deflection: The Pipe/Soil Mechanism" available from the Uni-Bell PVC Pipe Association

MINIMUM PITCH:

Minimum pitch on drainage pipe shall be one percent (1%). The Contractor shall furnish the Engineer with (relative) elevation shots on the top of the compacted pipe bedding material at intervals of every ten feet (10') maximum, so that a pitch of one percent (1%) or greater can be confirmed. Pipe pitch of less than one percent is acceptable, if first approved by the Engineer.

Item Numbers 004-106, 004-110 and 004-115 (continued):

CONSTRUCTION METHODS (cont.):

The Contractor shall clear and grub to the approved limits of construction as necessary under this item. The Contractor shall make every effort not to disturb areas outside of the approved limits of construction. If any areas outside of the limits of construction are disturbed during construction, they shall be returned to their original condition by the Contractor including all grading, liming, fertilizing and seeding at the Contractors own expense.

Existing pavement shall be removed and disposed of before the laying of any proposed pipe.

All proposed pipe shall be laid before the installation of new pavement.

In existing pavement areas proposed for new pipe laying, the Contractor shall saw cut the existing pavement before excavation to ensure good, clean pavement cuts. The Contractor shall saw cut pavements in accordance with the DETAIL SKETCH for trench patching attached to Items 004-010 through 004-031 (Page 53 of these specifications)."

The location of the sawcuts shall be at the edges of trench as shown in the typical details of the contract

The trench for the pipe shall be excavated to the required lines and grades as shown on the contract plans. The dimensions of the trench shall be of sufficient width to permit thorough tamping of the material under and around the pipe. The Contractor shall not receive additional compensation for excavation beyond the limits of work as shown in the typical details of the contract plans unless specifically directed by the Engineer.

The Contractor shall take all necessary precautions to prevent flotation of the pipe in the trench. At all times pipe installation is not in progress, the open ends of the pipe shall be closed with temporary watertight plugs.

When in the opinion of the engineer, unsuitable materials including muck, must be removed beyond the limits of excavation as detailed in the contract plans, the Contractor shall remove the unsuitable materials to a depth as determined by the Engineer. The excavated unsuitable materials shall be replaced with crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The crushed stone shall be placed in six inch lifts and thoroughly mechanically compacted.

The pipe bedding material shall be crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The minimum compacted depth of crushed stone below the pipe shall be 6 inches; and the crushed stone shall encase the pipe to one-half its height as shown on the Contract Drawings. The trench shall then be backfilled with gravel borrow placed in 6 inch lifts and compacted as herein specified to a depth of 12 inches above the pipe. The remainder of the trench shall be backfilled with suitable material from the excavation as

(cont.)

Item Numbers 004-106, 004-110 and 004-115 (continued):

CONSTRUCTION METHODS (cont.):

determined by the Engineer, placed in six inch (6") lifts, and compacted as specified above to obtain the required grades.

The bell end of pipe shall be toward the rising grade and each section of pipe shall have a firm bearing throughout its length. Material placed around and over the pipe shall be free of stones larger than three inches (3") in diameter.

All pipe shall be laid under "dry" weather conditions as determined by the Engineer. The Contractor shall use all pumping and dewatering procedures necessary to ensure that all pipe is laid under dry conditions to the satisfaction of the Engineer.

All backfilling shall consist of suitable materials as determined by the Engineer uniformly distributed and thoroughly compacted. When suitable material can not be obtained from excavation, the material shall be replaced with gravel borrow as directed by the Engineer. Ordinary borrow shall be used for mounding over pipes where the minimum cover in landscape areas is less than three feet (3'). All grading and mounding over pipes shall be indicated in the contract plans, or as directed by the Engineer.

Gravel Borrow shall meet the requirements as specified under Item No 011-010, "Gravel Borrow."

Loam Borrow shall be placed on meeting the requirements as specified under Item Number 007-010, "Loam Borrow." The loam borrow shall then be graded and seeded according to the requirements as specified under Item No. 008-010, "Grading, Liming, Fertilizing and Seeding."

SHORING & BRACING OF TRENCHES:

Wherever a trench is to be dug to a depth of five feet or more, that trench shall be sheeted and braced in conformity with the rules and regulations for the prevention of accidents in construction operations pursuant to Section 129A of Chapter 149 of the Massachusetts General Laws. Sheet piling and bracing will be included in the contract bid price for these pipe repairs.

The Contractor shall furnish all labor necessary to assist the Engineer in inspecting the pipe and fittings. The pipe and fittings shall be inspected upon delivery and any materials that do not conform to these specifications shall be rejected and immediately removed from the site by the Contractor.

(cont.)

Item Numbers 004-106, 004-110 and 004-115 (continued):

METHOD OF MEASUREMENT:

All pipe repairs shall be measured in place by the linear foot complete and accepted by the Engineer.

Additional gravel borrow and crushed stone are defined as material placed beyond the limits of excavation at the direction of the Engineer after the removal of unsuitable materials.

Quantities of measure by the truck load method shall be subject to deduction of fifteen (15%) percent to allow for loose bulking of the excavation materials when loaded into trucks.

All additional gravel borrow or crushed stone placed beyond the limits of excavation described herein and at the direction of the Engineer will be measured in units of cubic yards, complete in place, by the cross section method or, only if not feasible, by the truck load subject to a 15% deduction for shrinkage or some other practicable method designated by the Engineer.

Trench excavation for pipe will be included in the contract bid price for the type of pipe.

BASIS OF PAYMENT:

Drainage pipe repair will be paid for at the contract unit price per linear foot under Item No. 004-106, 004-110 & 004-015, listed above complete in place, depending on the size of the pipe repaired, which price shall include furnishing and laying SDR 35 Sewer & Drain Polyvinyl Chloride (PVC) pipe, all fittings necessary to make connections between existing and new pipe sections, connections to catch basins or manholes (bricks, mortar, etc.), dye tablets, all necessary clearing and grubbing in the trench areas, and all excavation, gravel borrow, removal and disposal of excess materials off of DCR property, backfilling, compaction, shoring and bracing, dewatering, pumping, and all labor, tools, equipment and all work incidental thereto to lay all pipe to the satisfaction of the Engineer.

Drainage pipe removed will be paid for at the contract unit price per linear foot under Item No. 006-010, "Drainage Pipe Removed and Discarded".

Crushed stone **placed beyond the limits of excavation** described herein and used for the replacement of unsuitable materials will be paid for at the contract unit price per ton under Item No. 005-010, "Crushed Stone".

At the Engineer's discretion, the Contractor may be directed to perform subsurface television investigation. If needed, subsurface television investigation shall be paid from Item Number 009-015, "Subsurface Television Investigation".

Item 004-208 Ductile Iron Pipe, Furnished & Installed (8-Inch Diameter) (LF)
Item 004-210 Ductile Iron Pipe, Furnished & Installed (10-Inch Diameter) (LF)
Item 004-212 Ductile Iron Pipe, Furnished & Installed (12-Inch Diameter) (LF)

DESCRIPTION

At the discretion of the Engineer, ductile iron pipe can be installed in areas where the surrounding soils are deemed to be non-corrosive, and cover over the pipe is less than what is recommended by the manufacturers of reinforced concrete pipe or PVC pipe.

The work under this item consists of furnishing and installing 8-inch, 10-inch or 12-inch ductile iron pipe to repair drainage lines, on compacted 6" crushed stone bed, in accordance with these specifications and as directed by the Engineer. All pipe shall be laid to the lines and grades as shown on the contract plans, or as directed by the Engineer.

CONSTRUCTION METHODS

The Contractor shall clear and grub to the approved limits of construction as necessary under this item. The Contractor shall make every effort not to disturb areas outside of the approved limits of construction. If any areas outside of the limits of construction are disturbed during construction they shall be returned to their original condition by the Contractor including all grading, liming, fertilizing and seeding at the Contractors own expense.

Existing pavements, shall be removed and disposed of before the laying of any proposed pipe.

All proposed pipe shall be laid before the constructing of new pavement.

In existing pavement areas proposed for new pipe laying, the Contractor shall saw cut the existing pavement before excavation to ensure good, clean pavement cuts. The Contractor shall sawcut pavement in accordance with the DETAIL SKETCH for trench patching that is attached to the specification for Items 004-010 through 004-131.

The location of the sawcuts shall be at the edges of trench as shown in the typical details of the contract.

The trench for the pipe shall be excavated to the required lines and grades as shown on the contract plans. The dimensions of the trench shall be of sufficient width to permit thorough tamping of the material under and around the pipe. The Contractor shall not receive additional compensation for excavation beyond the limits of work as shown in the typical details of the contract plans unless specifically directed by the Engineer.

Item 004-208 Ductile Iron Pipe, Furnished & Installed (8-Inch Diameter) (LF)
Item 004-210 Ductile Iron Pipe, Furnished & Installed (10-Inch Diameter) (LF)
Item 004-212 Ductile Iron Pipe, Furnished & Installed (12-Inch Diameter) (LF)

When in the opinion of the engineer, unsuitable materials including muck, must be removed beyond the limits of excavation as detailed in the contract plans, the Contractor shall remove the unsuitable materials to a depth as determined by the Engineer. The excavated unsuitable materials shall be replaced with crushed stone meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The crushed stone shall be placed in six inch lifts and thoroughly compacted.

The pipe bedding material shall be crushed stone (**see exception for use of PVC on page 1 of these provisions in "Description"**) meeting the requirements as specified under Item No. 005-010, "Crushed Stone." The minimum compacted depth of crushed stone below the pipe shall be 6 inches; and the crushed stone shall encase the pipe to one-half its height as shown on the Contract Drawings. The trench shall then be backfilled with gravel borrow placed in 6 inch lifts and compacted as herein specified to a depth of 12 inches above the pipe. The remainder of the trench shall be backfilled with suitable material from the excavation as determined by the Engineer, placed in 8 inch lifts and compacted as specified above to obtain the required grades.

The bell end of pipe shall be toward the rising grade and each section of pipe shall have a firm bearing throughout its length. Material placed around and over the pipe shall be free of stones larger than three inches (3") in diameter.

All pipe shall be laid under "dry" weather conditions as determined by the Engineer. The Contractor shall use all pumping and dewatering procedures necessary to ensure that all pipe is laid under dry conditions to the satisfaction of the Engineer.

All backfilling shall consist of suitable materials as determined by the Engineer uniformly distributed and thoroughly compacted. When suitable material can not be obtained from excavation, the material shall be replaced with gravel borrow as directed by the Engineer. Ordinary borrow shall be used for mounding over pipes where the minimum cover in landscape areas is less than three feet (3'). All grading and mounding over pipes shall be indicated in the contract plans and as directed by the Engineer.

Gravel Borrow shall meet the requirements as specified under Item No 011-010, "Gravel Borrow."

Loam Borrow shall be placed on meeting the requirements as specified under Item No. 007-010, "Loam Borrow." The loam borrow shall then be graded and seeded according to the requirements as specified under Item No. 008-010, "Grading, Liming, Fertilizing and Seeding."

Item 004-208 Ductile Iron Pipe, Furnished & Installed (8-Inch Diameter) (LF)

Item 004-210 Ductile Iron Pipe, Furnished & Installed (10-Inch Diameter) (LF)

Item 004-212 Ductile Iron Pipe, Furnished & Installed (12-Inch Diameter) (LF)

Wherever a trench is to be dug to a depth of five feet or more, that trench shall be sheeted and braced in conformity with the rules and regulations for the prevention of accidents in construction operations pursuant to Section 129A of Chapter 149 of the Massachusetts General Laws. Sheeting and bracing will be included in the contract bid price for these pipe repairs.

METHOD OF MEASUREMENT

All pipe repairs shall be measured by the Engineer, by the linear foot complete and in place.

MATERIALS

Ductile iron pipe installed under these Items, shall conform to **ANSI / AWWA Class 53** ductile iron pipe.

8-inch Ductile Iron Pipe shall have a minimum wall thickness of **0.36 inches**

10-inch Ductile Iron Pipe shall have a minimum wall thickness of **0.38 inches**

12-inch Ductile Iron Pipe shall have a minimum wall thickness of **0.40 inches**

Joints shall be rubber-gasketed, bell-type joints. Pipe shall be installed so that joints are as square, and full contact of the gasket is achieved, to the satisfaction of the Engineer.

Basis of Payment

Furnishing and installation of ductile iron pipe will be paid for at the contract unit price per linear foot under Item Numbers 004-208, 004-210, and 004-212, listed above complete in place, for 8-inch, 10-inch and 12-inch ductile iron pipe respectively. The unit price(s) shall include furnishing and laying the pipe, all fittings necessary to make connections between existing and new pipe sections, connections to catch basins or manholes (bricks, mortar, etc.), all necessary clearing and grubbing in the trench areas, **all excavation, gravel borrow**, removal and disposal of excess materials off of DCR property, backfilling, **shoring and bracing**, dewatering, pumping, and all labor, tools, equipment and all work incidental thereto to lay all pipe to the satisfaction of the Engineer.

Drainage pipe removed will be paid for at the contract unit price per linear foot under Item No. 006-010, "Drainage Pipe Removed and Discarded".

Crushed stone **placed beyond the limits of excavation** described herein and used for the replacement of unsuitable materials will be paid for at the contract unit price per ton under Item No. 005-010, "Crushed Stone".

- Item 004-222 Precast Concrete Headwall (EA)**
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

This Section covers all precast headwalls, flared-ends, manholes and catch basins complete, including, but not limited to, bases, walls, cones, mortar, inverts, frames and covers. Headwalls and Flared Ends shall conform to all applicable specifications for precast units contained herein including but not limited to finish, compressive strength and steel reinforcement requirements. The Engineer's attention is directed to the criteria listed in Part 2: "Products", of this specification.

DESCRIPTION:

- A. Precast sections shall conform in shape, size, dimensions, materials, and other respects to the details indicated on the drawings or as ordered by the Engineer.
- B. All manholes and catch basins shall have concrete bases. Concrete bases shall be precast unless otherwise specified. Invert channels as required shall be formed of brick and mortar upon the base. This method is to conform to Item 001-010's specification. All structure walls and flat slab tops shall also be precast concrete.
- C. Catch basins shall have a 4-foot deep sump, unless otherwise specified
- D. Riser and cone sections shall be precast concrete.
- E. Headwalls and/or Flared Ends are to be installed at locations listed, or at the Engineer's discretion, as needed. Headwalls are to be constructed in accordance with the attached MassDOT Construction Standards (Drawing Numbers E 206.4.0, E 206.4.1, E 206.5.0 & E 206.6.0 for Precast Concrete (Only)). Precast headwalls installed under this Contract must accommodate the relevant pipe diameter as closely as possible, subject to the complete satisfaction of the Engineer. Most headwall and flared end orifices required under this Contract will be in the 10-inch to 16-inch (10"-16") range, however, the Contractor will have no claim if the size of drainpipe intersecting the headwall or flared end is outside that 10-inch to 16-inch range.

REFERENCES:

The following standards form a part of this specification as referenced:

American Society for Testing and Materials (ASTM)

ASTM A48	Gray Iron Castings
ASTM C32	Sewer and Manhole Brick
ASTM C144	Aggregate for Masonry Mortar
ASTM C207	Hydrated Lime for Masonry Purposes
ASTM C478	Precast Reinforced Concrete Manhole Sections
ASTM C923	Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes
ASTM C1244	Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test.

(cont.)

- Item 004-222 Precast Concrete Headwall (EA)**
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

REFERENCES: (cont.)

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M198 Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets

SUBMITTALS:

- A. Three sets of manufacturer literature of the materials of this section shall be submitted to the Engineer for review.
- B. Tests reports as required shall be submitted to the Engineer.

PART 2 - PRODUCTS

PRECAST CONCRETE SECTIONS:

- A. All precast concrete sections shall conform to ASTM C478 for “Precast Reinforced Concrete Manhole Sections” and meet H-20 Design Loading per AASHTO HS-20-44, with the following exceptions and additional requirements:
 - 1. The wall thickness of precast sections shall be as designated on the drawings, meeting the following minimum requirements:

<u>Section Diameter (inches)</u>	<u>Minimum Wall Thickness (Inches)</u>
48	5
60	6
72	7
84	8

- 2. Type II cement shall be used except as otherwise approved.
- 3. Sections shall be steam cured and shall not be shipped until at least five days after having been cast.
- 4. Minimum compressive strength of concrete shall be 4,000 psi at 28 days.
- 5. No more than two lift holes may be cast or drilled in each section.
- 6. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each precast section.

(cont.)

Item 004-222 Precast Concrete Headwall (EA)
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

7. Acceptance of the sections will be on the basis of material tests and inspection of the completed product.
 8. Circumferential steel reinforcement in walls and bases shall be a minimum of 0.12 sq. in./lin. ft. for 4-foot diameter sections and 0.17 sq. in./lin. ft. for 5- and 6-foot diameter sections. Reinforcing shall extend into tongue and groove.
- B. Conical reducing sections shall have a wall thickness not less than 5-inches at the bottom and wall thickness of 8-inches at the top. Conical sections shall taper from a minimum of 48-inches diameter to 24 or 30-inches diameter at the top.
- C. Except where insufficient depth of cover dictates the use of a shorter base, bases shall be a minimum of 4 feet in height.
- D. Slab top sections shall meet H-20 design loading criteria.
- E. The tops of the bases shall be suitably shaped by means of accurate ring forms to receive the riser sections.
- F. Precast sections shall be manufactured to contain wall openings of the minimum size to receive the ends of the pipes, such openings being accurately set to conform with line and grade of the sewer or drain. Subsequent cutting or tampering in the field, for the purpose of creating new openings or altering existing openings, will not be permitted except as directed by the Engineer.
- G. "Drop-over" manholes shall be placed where directed by the Engineer. The Contractor shall accurately measure the diameter of the existing outlet pipe and inform the manufacturer of its size, so that the "Drop-over" type opening can be cut into the precast manhole base. The bottom shall be cast in place by the Contractor. The invert channel shall be formed of brick and mortar. The sub-base shall be a compacted, level foundation of crushed stone, at least 6-inches thick, as described in Item 005-010, "Crushed Stone", but shall vary to the depth necessary to reach sound undisturbed earth.
- H. The exterior surfaces of all precast manhole bases, walls, and cones shall be given a minimum of one shop coat of bituminous damp-proofing.
- I. The Engineer reserves the right to reject any unsatisfactory precast section and the rejected unit shall be tagged and removed from the job site immediately.

(cont.)

- Item 004-222 Precast Concrete Headwall (EA)**
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

- J. The Engineer may also require the testing of concrete sections as outlined under Physical Requirements in ASTM C478 with the Contractor bearing all testing costs.
- K. All backfilled soil shall be placed in lifts not exceeding eight-inches(8”), and mechanically compacted to the complete satisfaction of the Engineer

BRICK MATERIALS:

- A. Only red clay sewer brick, kiln-dried, conforming to the requirements of AASHTO Designation M91 with the following exceptions:

The size of the red-clay brick furnished may be any one of the four standard sizes, at the option of the Contractor, but the selected standard size shall be constant throughout the project, unless a change is pre-approved by the Engineer

The average of the absorption of five representative samples shall conform to the requirements of ASTM Designation C67.

The average compressive strength of five representative samples shall not be less than 3,000 pounds per square inch, and the compressive strength of any one sample shall not be less than 2,500 pounds per square inch.

Red clay, kiln-dried, sewer brick shall be machine-made solid segments conforming to the requirements of ASTM-C139, except that the minimum average compressive strength of five representative bricks shall be 3,000 pounds per square inch and the minimum compressive strength of an individual brick shall be 2,500 pounds per square inch. Rejected brick shall be immediately removed from the work and brick satisfactory to the Engineer substituted. Dimensional requirements shall be the same as for clay sewer brick.

- B. Rejected brick shall be immediately removed from the work and brick satisfactory to the Engineer substituted.
- C. Mortar shall be composed of portland cement, hydrated lime, and sand in which the volume of sand shall not exceed three times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 for dense hard-burned brick to 1:3/4 for softer brick. In general, mortar for Grade SS Brick shall be mixed in the volume proportions of 1:1/2:4-1/2; portland cement to hydrated lime to sand.
- D. Cement shall be Type II portland cement as specified for concrete masonry.

(cont.)

- Item 004-222 Precast Concrete Headwall (EA)**
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

- E. Hydrated lime shall be Type S conforming to ASTM C207.
- F. The sand shall comply with ASTM C144 specifications for "Fine Aggregate," except that all of the sand shall pass a No. 8 sieve.

FRAMES, GRATES, COVERS AND STEPS:

** *Many types of castings are mentioned below. The catchbasin grate shall typically be a D-Frame shape grate, but the choice of casting type shall be left to the Engineer to allow for the most effective casting in any of the various scenarios that may be encountered in the field. ***

- A. Castings shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sandholes, and defects of every nature which would render them unfit for the service for which they are intended. Contact surfaces of covers and frame seats shall be machined to prevent rocking of covers.
- B. All castings shall be thoroughly cleaned and may be subject to a careful hammer inspection at the Engineer's discretion.
- C. Castings shall be ASTM A48 Class 30B or better.
- D. The surface of the manhole covers shall have a diamond pattern with the cast words "WATER," "DRAIN" or "SEWER," whichever is appropriate.
- E. Manhole frames with 32-inch covers for 30-inch openings shall be 500 pounds minimum by E.L. LeBaron Foundry Co., No. LC328; Quality Water Products, Style 47; Neenah Foundry Co., R1740B or approved equal.
- F. Watertight type manhole frames with 32-inch diameter covers (bolted and gasketed) shall be 4 bolt, 630 pounds minimum by E.L. LeBaron Foundry Co. No. LCB328; Quality Water Products, Style C47WT; Neenah Foundry Co., R-17550-H or approved equal.
- G. Manhole frames with 26-inch covers for 24-inch openings shall be 475 pounds minimum by E.L. LeBaron Foundry Co., No. LK110; Neenah Foundry Co. R1720; Quality Water Products, Style 40; or approved equal.
- H. Watertight type manhole frames with 26-inch diameter covers (bolted and gasketed) shall be 4 bolt, 475 pounds minimum, and shall be E.L. LeBaron Foundry Co. No. LBB268; Mechanics Iron Foundry Type A2073; Quality Water Products, Style 40WT; or approved equal.
- I. Frostproof manhole frames, with covers and inner lids shall be R-1758 series by Neenah Foundry Co., Neenah, WI; LBF series by E.L. LeBaron Foundry Co., Brockton, MA; B-3045 (or similar) by Mechanics Iron Foundry, Boston, MA; or approved equal.

(cont.)

Item 004-222 Precast Concrete Headwall (EA)
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

- J. 2-inch thick polystyrene insulation shall be firmly adhered to all frostproof inner lids.
- K. Catch basin frames with 2-inch square openings and 23-7/8-inch square grates shall be 8-inches in height and 460 pounds minimum. They shall be Neenah Foundry Co. No. 3405; Quality Water Products No. 45; E.L. LeBaron Type F; or approved equal.
- L. Catch basin frames with 'D' frame shape with 2 ft. wide opening shall be 8-inches in height and 460 pounds minimum. . They shall be Neenah Foundry Co. No. R-3589; Quality Water Products No. 45; E.L. LeBaron LK121; or approved equal.
- N. Catch basin frames set against curbing shall have three flanges only.
- O. Manhole steps shall conform to ASTM C478 requirements and shall be fabricated of either extruded aluminum or steel reinforced plastic. Steps shall be uniformly spaced at a maximum of 12-inches unless otherwise shown on the drawings.
- P. All new catchbasins shall be equipped with **cast-iron hoods** designed to maximize the likelihood of retaining oil, gasoline, debris, and all contaminants less dense than water, IN the catchbasin and NOT flow freely downstream during heavy rain events.

PART 3 - EXECUTION

INSTALLATION:

A. PRECAST SECTIONS:

1. Precast bases shall be supported on a compacted level foundation of crushed stone, as specified in Item 005-010, at least 6-inches thick, but shall vary to the depth necessary to reach sound undisturbed earth.
2. Precast reinforced concrete sections shall be set vertical and with sections in true alignment.
3. Butyl rubber joint sealant shall be installed between each concrete section. Catch basin sections do not require joint sealant if so indicated on the drawings.

(cont.)

Item 004-222 Precast Concrete Headwall	(EA)
Item 004-333 Precast Concrete Flared End	(EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting	(EA)

4. All holes in sections used for handling the sections shall be thoroughly plugged with mortar. Mortar shall be one part cement to 1-1/2 parts sand, mixed slightly damp to the touch (just short of "balling"), hammered into the holes until it is dense and an excess of paste appears on the surface, and then finished smooth and flush with the adjoining surfaces.

B. BRICK WORK:

1. Bricks shall be moistened by suitable means, as directed, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.
2. Each brick shall be laid as a header in a full bed and joint of mortar without requiring subsequent grouting, flushing or filling, and shall be thoroughly bonded as directed.
3. The brick inverts shall conform accurately to the size of the adjoining pipes. Side inverts shall be curved and main inverts (where direction changes) shall be laid out in smooth curves of the longest possible radius which is tangent to the centerlines of adjoining pipe.

C. CASTINGS:

1. Cast iron frames, grates and covers shall be as specified. The frames and covers shall be set by the Contractor to conform accurately to the grade of the finished pavement, existing ground surface, or as indicated on the drawings. Frames shall be adjusted to meet the street surface.
2. Cast iron manhole frames and covers not located in paved areas shall be set 6-inches above finished grade, at a height as directed by the Engineer, or as indicated on the drawings. The top of the cone shall be built up with a minimum of 1 course and a maximum of 5 courses of brick and mortar used as headers for adjustment to final grade.
3. Frames shall be set concentric with the top of the concrete section and in a full bed of mortar so that the space between the top of the concrete section or brick headers and the bottom flange of the frame shall be completely filled and made watertight. A thick ring of mortar extending to the outer edge of the concrete shall be placed all around the bottom flange. The mortar shall be smoothly finished to be flush with the top of the flange and have a slight slope to shed water away from the frame.
4. Covers and/or grates shall be left in place in the frames, for safety reasons, except while work is being performed.

- Item 004-222 Precast Concrete Headwall (EA)**
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

D. HOT-MIX ASPHALT

Hot-Mix Asphalt for roadway patching shall conform to Spec. for Item 009-010.

E. ACCESSORIES:

1. Accessories shall be installed in accordance with manufacturer's instructions.
2. Stubs shall be set accurately to the dimensions indicated on the drawings. Stubs shall be sealed with suitable watertight plugs.

LEAKAGE TESTS:

- A. Leakage tests shall be made by the Contractor and observed by the Engineer on each manhole. The test shall be by vacuum or by water exfiltration as described below:

B. VACUUM TEST:

1. The vacuum test shall be conducted in accordance with ASTM C1244. Test results will be judged by the length of time it takes for the applied vacuum to drop from 10 inches of mercury to 9 inches. If the time is less than that listed in Table 1 of ASTM C1244, the manhole will have failed the test. Test times from Table 1 are excerpted below.

TABLE 1

Minimum Test Times for Various Manhole Diameters

<u>Depth (Feet)</u>	<u>Diameter (Inches)</u>		
	48	60	72
	<u>Times (Seconds)</u>		
0-12	30	39	49
12-16	40	52	67
16-20	50	65	81
20-24	59	78	97
26-30	74	98	121

2. If the manhole fails the initial test, the Contractor shall locate the leaks and make proper repairs. Leaks may be filled with a wet slurry of accepted quick setting material. If the manhole should again fail the vacuum test, additional repairs shall be made, and the manhole water tested as specified below.

Item 004-222 Precast Concrete Headwall	(EA)
Item 004-333 Precast Concrete Flared End	(EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting	(EA)

C. WATER EXFILTRATION TEST:

1. After the manhole has been assembled in place, all lifting holes shall be filled and pointed with an approved non-shrinking mortar. All pipes and other openings into the manhole shall be suitably plugged and the plugs braced to prevent blow out. The test shall be made prior to placing the shelf and invert. If the groundwater table has been allowed to rise above the bottom of the manhole, it shall be lowered for the duration of the test.
2. The manhole shall be filled with water to the top of the cone section. If the excavation has not been backfilled and observation indicates no visible leakage, that is, no water visibly moving down the surface of the manhole, the manhole may be considered to be satisfactorily watertight. If the test, as described above, is unsatisfactory as determined by the Engineer or if the manhole excavation has been backfilled, the test shall be continued. A period of time may be permitted if the Contractor so wishes, to allow for absorption by the manhole. At the end of this period, the manhole shall be refilled to the top of the cone, if necessary, and a measuring time of at least 8 hours begun. At the end of the test period, the manhole shall be refilled to the top of the cone, measuring the volume of water added. This amount shall be extrapolated to a 24-hour loss rate and the leakage determined on the basis of depth. The leakage for each manhole shall not exceed one gallon per vertical foot for a 24-hour period. If the manhole fails this requirement, but the leakage does not exceed 3 gallons per vertical foot per day, repairs by approved methods may be made as directed by the Engineer to bring the leakage within the allowable rate of one gallon per foot per day. Leakage due to a defective section or joint or exceeding the 3 gallon per vertical foot per day, shall be cause for rejection of the manhole. It shall be the Contractor's responsibility to uncover the rejected manhole as necessary and to disassemble, reconstruct or replace it as directed by the Engineer. The manhole shall then be retested and, if satisfactory, interior joints shall be filled and pointed.
3. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorption, etc. It shall be assumed that all loss of water during the test is a result of leaks through joints or through the concrete. Furthermore, the Contractor shall take any steps necessary to assure the Engineer that the water table is below the bottom of the manhole throughout the test.

(cont.)

Item 004-222 Precast Concrete Headwall (EA)
Item 004-333 Precast Concrete Flared End (EA)
Item 004-444 Precast Concrete Catchbasin/Manhole, Complete, including Casting (EA)

4. If the groundwater table is above the highest joint in the manhole, and there is no leakage into the manhole, as determined by the Engineer, such a test can serve to evaluate water-tightness of the manhole. However, if the Engineer is not satisfied with the results, the Contractor shall lower the water table and carry out the test as described hereinbefore.

CLEANING:

- A. All new manholes shall be thoroughly cleaned of all silt, debris and foreign matter of any kind, prior to final inspection.

BASIS OF PAYMENT:

For Item 004-222, "Precast Concrete Headwall", Item 004-333, "Precast Concrete Flared End" and Item 004-444, "Precast Concrete Catchbasin/Manhole, Complete, including Casting", payment will be made for **EACH**, based on the contract unit price for that particular Item. The bid price shall include all sawcutting, edge stone removal and resetting, unclassified excavation, fine-grading, compaction, joint-mortaring, and furnishing and installing red clay brick, crushed stone, cement concrete block, gravel borrow, concrete collars, cement concrete in front of edge stone, bituminous tack coat and bituminous concrete.

Excavation Limit for Item 004-444:

For Item 004-444, "Precast Concrete Catchbasin/Manhole, Complete, including Casting", the amount of excavation around the structure that will be considered incidental to the item and included in the unit price of 004-444 is one foot (1'). If the DCR Resident Engineer deems that additional excavation (**between one-foot and a maximum of two-feet from the structure**) is necessary for proper installation of the structure, then the volume of that additional excavation shall be paid for using Item 010-010, "Unclassified Excavation".

For Item 004-444, "Precast Concrete Catchbasin/Manhole, Complete, including Casting", the cost of furnishing and installing any necessary casting (frame and grate or cover) shall also be covered by the accepted, bid unit-price for Item 004-444.

The cost of haybales and sedimentation fence shall be addressed by separate specifications in this Contract (Items 010-222 and 010-333).

Item 004-500 Precast Concrete Gutter Inlet – Including Castings (Frame & Grate) (EA)

DESCRIPTION:

This Item covers the furnishing and installation of precast gutter inlets, complete in place, including castings, where directed by the Engineer. For the purposes of this Contract, Gutter Inlet structures shall have a minimum inside diameter of two-feet, and a minimum height of thirty (30) inches, measured from invert to top of precast structure.

REFERENCES:

The following standards form a part of this specification as referenced:

American Society for Testing and Materials (ASTM)

ASTM A48	Gray Iron Castings
ASTM C32	Sewer and Manhole Brick
ASTM C144	Aggregate for Masonry Mortar
ASTM C207	Hydrated Lime for Masonry Purposes
ASTM C478	Precast Reinforced Concrete Manhole Sections
ASTM C923	Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes

SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

- A. Six sets of manufacturer literature of the materials of this section shall be submitted to the Engineer for review.
- B. Tests reports as required shall be submitted to the Engineer.

PART 2 - PRODUCTS

PRECAST CONCRETE SECTIONS:

- A. All precast concrete sections shall conform to ASTM C478 with the following exceptions and additional requirements:
 - 1. The wall and floor thickness of precast gutter inlets shall be a minimum of six (6) inches.

Item 004-500 Precast Concrete Gutter Inlet – Including Castings (cont.) (EA)

2. Type II cement shall be used except as otherwise approved.
 3. Sections shall be steam cured and shall not be shipped until at least five days after having been cast.
 4. Minimum compressive strength of concrete shall be 4000 psi at 28 days.
 5. No more than two lift holes may be cast or drilled in each section.
 6. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each precast section.
 7. Acceptance of the sections will be on the basis of material tests and inspection of the completed product.
- B. Precast sections shall be manufactured to contain wall openings of the minimum size to receive the ends of the pipes, such openings being accurately set to conform with line and grade of the sewer or drain. Subsequent cutting or tampering in the field, for the purpose of creating new openings or altering existing openings, will not be permitted, except as directed by the Engineer.
- C. The exterior surfaces of all precast gutter inlets shall be given a minimum of one shop coat of bituminous damp-proofing.
- D. The Engineer reserves the right to reject any unsatisfactory precast section and the rejected unit shall be tagged and removed from the job site immediately.
- E. The Engineer may also require the testing of concrete sections as outlined under Physical Requirements in ASTM C478 with the Contractor bearing all testing costs.

Item 004-500 Precast Concrete Gutter Inlet – Including Castings (cont.) (EA)**BRICK MATERIALS:**

- A. Only red clay sewer brick, kiln-dried, conforming to the requirements of AASHTO Designation M91 with the following exceptions:

The size of the brick furnished may be any one of the four standard sizes, at the option of the Contractor, but the selected standard size shall be constant throughout the project.

The average of the absorption of five representative samples shall conform to the requirements of ASTM Designation C67.

The average compressive strength of five representative samples shall not be less than 3,000 pounds per square inch, and the compressive strength of any one sample shall not be less than 2,500 pounds per square inch.

Red clay, kiln-dried, sewer brick shall be machine-made solid segments conforming to the requirements of ASTM-C139, except that the minimum average compressive strength of five representative bricks shall be 3,000 pounds per square inch and the minimum compressive strength of an individual brick shall be 2,500 pounds per square inch. Rejected brick shall be immediately removed from the work and brick satisfactory to the Engineer substituted. Dimensional requirements shall be the same as for clay sewer brick.

- B. Rejected brick shall be immediately removed from the work and brick satisfactory to the Engineer substituted.
- C. Mortar shall be composed of portland cement, hydrated lime, and sand in which the volume of sand shall not exceed three times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 for dense hard-burned brick to 1:3/4 for softer brick. In general, mortar for Grade SS Brick shall be mixed in the volume proportions of 1:1/2:4-1/2; portland cement to hydrated lime to sand.
- D. Cement shall be Type II portland cement as specified for concrete masonry.
- E. Hydrated lime shall be Type S conforming to ASTM C207.
- F. The sand shall comply with ASTM C144 specifications for "Fine Aggregate," except that all of the sand shall pass a No. 8 sieve.

Item 004-500 Precast Concrete Gutter Inlet – Including Castings (cont.) (EA)

FRAMES, GRATES, COVERS AND STEPS:

**** Many types of castings are mentioned below. The catchbasin grate shall typically be a D-Frame shape grate, but the choice of casting type shall be left to the Engineer to allow for the most effective casting in any of the various scenarios that may be encountered in the field. *****

- A. Castings shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sandholes, and defects of every nature which would render them unfit for the service for which they are intended. Contact surfaces of covers and frame seats shall be machined to prevent rocking of covers.
- B. All castings shall be thoroughly cleaned and may be subject to a careful hammer inspection at the Engineer's discretion.
- C. Castings shall be ASTM A48 Class 30B or better.
- D. Catch basin frames with 2-inch square openings and 23-7/8-inch square grates shall be 8-inches in height and 460 pounds minimum. They shall be Neenah Foundry Co. No. 3405; Quality Water Products No. 45; E.L. LeBaron Type F; or approved equal.
- E. Catch basin frames with bar grate openings and 23-7/8-inch square grates shall be 8-inches in height and 460 pounds minimum. Bar grates shall not be used in areas where bicycle traffic could be present. They shall be Neenah Foundry Co. No. R-3589; Quality Water Products No. 45; E.L. LeBaron LK121; or approved equal.
- F. Catch basin frames with cascade grate openings and 23-7/8-inch square grates shall be 8-inches in height and 430 pounds minimum. They shall be Neenah No. R-3589; Quality Water Products Mass Standard; E.L. LeBaron No. LK121A; or approved equal.
- G. Catch basin frames set against curbing shall have three flanges only.

PART 3 - EXECUTION

INSTALLATION:

- A. PRECAST SECTIONS:
 - 1. Precast bases shall be supported on a compacted level foundation of crushed stone, as specified in Item 005-010, at least 6-inches thick, but shall vary to the depth necessary to reach sound undisturbed earth.
 - 2. Precast reinforced concrete sections shall be set vertical and with sections in true alignment.

Item 004-500 Precast Concrete Gutter Inlet – Including Castings (cont.) (EA)

3. All holes in sections used for handling the sections shall be thoroughly plugged with mortar. Mortar shall be one part cement to 1-1/2 parts sand, mixed slightly damp to the touch (just short of "balling"), hammered into the holes until it is dense and an excess of paste appears on the surface, and then finished smooth and flush with the adjoining surfaces.

B. BRICK WORK:

1. Bricks shall be moistened by suitable means, as directed, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.
2. Each brick shall be laid as a header in a full bed and joint of mortar without requiring subsequent grouting, flushing or filling, and shall be thoroughly bonded as directed.
3. The brick inverts shall conform accurately to the size of the adjoining pipes. Side inverts shall be curved and main inverts (where direction changes) shall be laid out in smooth curves of the longest possible radius which is tangent to the centerlines of adjoining pipe.

C. CASTINGS:

1. Cast iron frames, grates and covers shall be as specified. The frames and covers shall be set by the Contractor to conform accurately to the grade of the finished pavement, existing ground surface, or as indicated on the drawings. Frames shall be adjusted to meet the street surface.
2. Cast iron manhole frames and covers not located in paved areas shall be set 6-inches above finished grade, at a height as directed by the Engineer, or as indicated on the drawings. The top of the cone shall be built up with a minimum of 1 course and a maximum of 5 courses of brick and mortar used as headers for adjustment to final grade.
3. Frames shall be set concentric with the top of the concrete section and in a full bed of mortar so that the space between the top of the concrete section or brick headers and the bottom flange of the frame shall be completely filled and made watertight. A thick ring of mortar extending to the outer edge of the concrete shall be placed all around the bottom flange. The mortar shall be smoothly finished to be flush with the top of the flange and have a slight slope to shed water away from the frame.
4. Covers and/or grates shall be left in place in the frames, for safety reasons, except while work is being performed.

Item 004-500 Precast Concrete Gutter Inlet – Including Castings (cont.) (EA)

LEAKAGE TESTS:

1. If the manhole fails the initial test, the Contractor shall locate the leaks and make proper repairs. Leaks may be filled with a wet slurry of accepted quick setting material.
2. After the gutter inlet has been assembled in place, all lifting holes shall be filled and pointed with an approved non-shrinking mortar. If the groundwater table has been allowed to rise above the bottom of the manhole, it shall be lowered for the duration of the test.
3. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorption, etc. It shall be assumed that all loss of water during the test is a result of leaks through joints or through the concrete. Furthermore, the Contractor shall take any steps necessary to assure the Engineer that the water table is below the bottom of the manhole throughout the test.
4. If the groundwater table is above the highest joint in the gutter inlet, and there is no leakage into the gutter inlet, as determined by the Engineer, such a test can serve to evaluate water-tightness of the gutter inlet. However, if the Engineer is not satisfied with the results, the Contractor shall lower the water table and carry out the test as described hereinbefore.

CLEANING:

- A. All new gutter inlets shall be thoroughly cleaned of all silt, debris and foreign matter of any kind, prior to final inspection.

BASIS OF PAYMENT:

For Item 004-500, “Precast Concrete Gutter Inlet, Complete, **including Casting**”, payment will be made for **EACH**, based on the contract unit price for Item 004-500. The bid price shall include all saw cutting, edge stone removal and resetting, unclassified excavation, fine-grading, joint-mortaring, and furnishing and installing red clay brick, crushed stone, cement concrete block, gravel borrow, concrete collars, cement concrete in front of edge stone, bituminous tack coat and bituminous concrete.

For Item 004-500, “Precast Concrete Gutter Inlet, Complete, **including Casting**”, the cost of furnishing and installing any necessary casting (frame and grate or cover) shall also be covered by the accepted, bid unit-price for Item 004-500.

The cost of haybales and sedimentation fence shall be addressed by separate specifications in this Contract (Items 010-222 and 010-333).

Item 004-777 Furnish & Install New Hood in Existing Catchbasin (EA)

DESCRIPTION

This Item covers the furnishing and installation of catchbasin hoods in existing catchbasins, at the direction of the Engineer. The Contractor is responsible for verifying pipe sizes and compatibility between outlet pipe size and the proposed catchbasin hood.

CONSTRUCTION METHODS

The new hood shall form a uniformly tight seal to the inside wall of the structure so as to prevent flow circumventing the sides of the hood device.

Included in this Item shall be the necessary removal and disposal of any previously used hood brackets or attachment hardware that are no longer needed.

MATERIALS

The acceptable hood must be capable of retrofitted installation into the existing DCR catchbasin, and shall be constructed of high-density polyethylene or a glass reinforced resin composite.

If required, any metal hardware used shall be stainless steel, and the contractor shall furnish the Engineer material information on the hardware prior to its use on this Contract.

The following hood products are approved for use on this Contract:

The “Eliminator” catchbasin oil and debris trap, manufactured by Ground Water Rescue; 24 Ryden Street, Quincy MA 02169 (617) 773-1128.

The “Snout” catchbasin oil and debris trap, manufactured by Best Management Products (BMP); 53 Mt. Archer Road, Lyme, CT (800) 504-8008.

Or other approved equal submitted by the contractor and approved by the Project Engineer.

A Certificate of Compliance shall be submitted to the DCR Laboratory through the DCR Resident Engineer for approval prior to use on this project.

BASIS OF PAYMENT

Item 004-777 “Furnish & Install New Hood in Existing Catchbasin” shall be paid based on the accepted Contract bid price per each hood, complete in place, and to the satisfaction of the Engineer. This payment shall include all labor including the removal and disposal of any previously-used hood mounting brackets or attachment hardware, all tools, equipment, transportation costs, shipping costs and all other incidental work, necessary to install the hood to the manufacturer’s requirements, and to the satisfaction of the Engineer.

ITEM NO. 005-010 CRUSHED STONE (TON)

DESCRIPTION:

The work to be done under this item consist of furnishing, all labor, materials, equipment and transportation required to install and compact crushed stone around the foundation wall as shown on the Drawing and/or as ordered by the Engineer.

MATERIALS:

Crushed stone shall consist of one or the other of the following materials:

- 1) Durable crushed rock consisting of the angular fragments obtained by breaking and crushing solid or shattered natural rock, and free from a detrimental quantity of thin, flat, elongated, or other objectionable pieces.
- 2) Durable crushed gravel stone obtained by artificial crushing of gravel boulders or field stone with a minimum diameter, before crushing, of 8 inches.

The crushed stone shall have a maximum percentage of wear as determined by AASHTO-T96 and shall be uniformly blended according to the following gradation.

<u>SIEVE</u>	<u>PERCENT PASSING</u>
5/8"	100
1/2"	85-100
3/8"	15-45
NO. 4	0-15
NO. 8	0-5

METHOD OF MEASUREMENT:

Crushed stone used for pipe bedding will be measured by the ton.

The weight slips shall be countersigned on delivery by the Engineer, and any weight slip not so countersigned shall not be included for any Payment under the contract.

BASIS OF PAYMENT:

Crushed stone will be paid for at the contract unit price per ton under Item No. 005-010, "Crushed Stone", complete in place, which price shall include furnishing, placing, grading, compacting and tamping and all labor, tools, equipment and all work incidental thereto.

Item 005-222 Rip-Rap - Stone for Pipe Ends (CY)

DESCRIPTION

This Item covers the furnishing and installation of stone for pipe ends to minimize erosion of soils downstream of drainage outfall pipe.

CONSTRUCTION METHODS

The area immediately downstream of the pipe shall be cleaned of debris and vegetation prior to stone placement. This same area shall be prepared so that ten to twelve inches of stone, when placed, does not interfere with stormwater flow exiting the pipe.

The minimum area of stone placement per outfall pipe shall be 100 square feet, in a configuration to be determined by the Engineer on a case by case basis (5' x 20'; 10' x 10' etc.)

MATERIALS

"Stone for pipe ends" shall be sound durable rock which is angular in shape. Rounded stones, boulders, sandstone or similar stone, or relatively thin slabs will not be acceptable. Each stone shall weigh not less than 3 pounds and not more than 25 pounds. Stones shall be so graded that when placed with larger stones the entire mass will be compact.

Rip-Rap stone size will be selected at the Engineer's discretion, however, high flow-rates as well as the likelihood of potential vandalism may often create environments that warrant the heavier stone specified above.

BASIS OF PAYMENT

Item 005-222 "Stone for Pipe Ends", shall be paid based on the accepted Contract bid price per cubic yard, complete in place, and to the satisfaction of the Engineer. This payment shall include all labor, tools, equipment, transportation costs, shipping costs and all other incidental work, necessary to install the stone for pipe ends to the satisfaction of the Engineer.

ITEM NO. 006-010	Drainage Pipe Removed and Discarded	(LF)
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DESCRIPTION

The work under this item consists of removing existing drainage pipe as shown on the contract plans, in accordance with these specifications or as directed by the Engineer.

CONSTRUCTION METHODS

All existing drainage lines encountered in the excavation for the construction of proposed drainage pipe or structures shall be removed as necessary to provide a minimum distance of 2 feet between any abandoned existing drainage line and the new proposed drainage pipe or structure.

All drainage pipe removed shall become the property of the Contractor, and shall be satisfactorily disposed of by the Contractor off of DCR property.

BASIS OF PAYMENT

All drainage lines removed will be paid for at the contract unit price per linear foot; under Item No. 006-010, "Drainage Pipe Removed and Discarded", which price shall include all cutting, sawing, labor, tools, materials, equipment, removal and disposal of the pipe, transportation and all work incidental thereto.

Excavation in which proposed pipe is replacing existing drainage lines in the same location will be included in the contract unit price per linear foot for new pipe under the appropriate Items for new pipe to be installed, for the size and type of pipe.

Item 007-010: LOAM BORROW

(CY)

DESCRIPTION

The work under this item consists of furnishing and placing loam in accordance with the specifications and as directed by the Engineer.

MATERIALS

Loam borrow for designated areas shown on the plans shall conform to the following grain size distribution for material passing the #4 sieve:

Size of Sieve or (Grain Size)	Percent Passing Maximum	By Weight Minimum
#4	100	100
#40	85	60
#100	60	38
#200	40	28
(0.002 m.m.)	10	0

Maximum size shall be one and a quarter inches largest dimension. The maximum retained on the 1/4" sieve shall be 20% by weight of the total sample. Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422 after destruction of organic matter by ignition.

Loam borrow shall contain between five and one half and twelve percent organic matter by weight as determined by the loss on ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 105°C (test material passing #4 sieve).

Loam borrow shall be free of plants and their roots, debris and other extraneous matter. It shall be uncontaminated by salt water, foreign matter and substances harmful to plant growth. The electrical conductivity (EC2) of a 1:2 soil-water suspension shall be equal to or less than 1.0 millimhos/cm. (test material passing #4 sieve).

The Contractor shall furnish a certified report of an approved analytical chemist showing the analysis of representative samples of the loam borrow which he proposes to use, and including lime fertilizer required. Loam borrows submitted for approval must present at least 100% of the total volume for this item.

Item 007-010: LOAM BORROW (Continued)

(CY)

MATERIALS(Continued)

All samples are to be taken in the presence of the Engineer, and delivered to a certified laboratory by the Contractor; all costs for such shall be borne by the Contractor. No loam borrow shall be delivered until the approval of samples by the Engineer, but such approval shall not constitute final acceptance. The Engineer reserves the right to reject on or after delivery any material which does not, in his opinion, meet these specifications.

All areas to be seeded shall be inspected by the Contractor before starting work. Any defects, such as incorrect grading, etc., shall be reported to the Engineer prior to beginning this work. The commencement of work by this contractor shall indicate his acceptance of the areas to be seeded, and he shall assume full responsibility for the work of this item.

CLEAN UP

Any soil or similar material which has been brought on to paved areas by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times.

Upon completion of work under this item all excess stones, debris and soil resulting from work under this Section which have not previously been cleaned up shall be cleaned up and removed from the project site.

CERTIFICATION OF ACCEPTABILITY

After inspection by the Engineer, the Contractor will be notified by the Engineer of acceptability of all work performed under this item or if there are any deficiencies of the requirements for completion of the work. Maintenance or other work remaining to be done shall be subject to reinspection before being certified acceptable.

METHOD MEASUREMENT

Loam borrow will be measured in place after rolling whenever in the opinion of the Engineer it is practical to do so, or in truckload measurement subject to a deduction of the 15%.

BASIS OF PAYMENT

Loam borrow will be paid for at the contract unit price bid per cubic yard for "Loam Borrow" complete in place, which price shall include furnishing, placing, grading, testing, compacting, and all work specified in the above specification, all labor, tools and equipment and all incidental work thereto.

DESCRIPTION

All areas to be seeded shall be regraded and carefully prepared by spading or harrowing and raking to remove all stones, roots, and rubbish and the whole surface rolled. During the rolling, all depressions caused by settlement or rolling are to be filled with loam and the surface regraded and rolled until true and even up to finish grade. Stones, brought up by the rakes shall be removed.

MATERIALS

All materials described below are to be furnished by the Contractor as specified herein.

LIME shall be standard commercial ground limestone incorporated into the top 4 inches of loam.

COMMERCIAL FERTILIZER shall be standard commercial granular fertilizer which conforms top all applicable state fertilizer laws.

GRASS SEED shall be fresh, clean, new crop seed. It may be mixed by an approved method on the site, or may be mixed by the dealer. If mixed on the site, each variety shall be delivered in the original containers which shall bear the dealers analysis. If the seed is mixed by the dealer, the Contractor shall furnish to the Engineer, the dealer's guaranteed statement of the composition of the mixture and the percentage of purity and germination of each variety.

Grass seed shall be composed of the following varieties mixed in the proportions specified and shall be applied at the rate of 200 pounds per acre.

SCIENTIFIC NAME	COMMON NAME	PROPORTION BY WEIGHT	PURITY	GERMINATION
Festuca rubra failax	Chewing Fescue	30	98%	85%
Poa Pratensis merion	Merion Bluegrass	15	87%	85%
Lolium perene var Manhattan	Manhattan Pre Rye	15	90%	90%
Festuca rubra Pennlawn	Pennlawn Creeping Red Fescue	40	98%	90%

FERTILIZATION

At the time of raking, the Contractor shall incorporate into the top 4 inches of loam lime at the rate as recommended in certified analysis. No seeding shall be done within four days after the lime is applied. Subsequent to the application of the lime, the Contractor is to spread evenly over all the areas to be seeded, Commercial fertilizer at the rate recommended and incorporated into the 1 inch of loam. If seeding is to be done by the spray method, the fertilizer may be mixed in the tank with the seed and water.

METHODS OF SEEDING WILL BE DETERMINED BY THE DCR ENGINEER IN THE FIELD, ON A SITE-BY-SITE BASIS. If seeding is to be done by the conventional method, fertilizer shall be spread in advance of seeding by approved mechanical spreading devices and lightly raked into the top of the soil.

SEEDING

- A. Limit of seeding shall be indicated on the Contract Documents. All lawn areas disturbed outside the limit of seeding work shall be prepared and seeded as specified herein at no additional cost.
 1. To prevent loss of soil via water and wind erosion and to prevent the flow of sediment, fertilizer, and pesticides onto roadways, sidewalks, and into catch basins, seed newly graded loam areas within 5 Days of spreading the loam.
- B. Seeding of all new seeded lawn areas shall be done using the Broadcast and/ or Hydroseeding Methods specified below. When delays in operations extend the work beyond the most favorable planting season for species designated or when conditions are such that satisfactory results are not likely to be obtained, halt work as directed and resume only when conditions are favorable or when approved alternate or corrective measures and procedures have been affected. No seeding shall be done when the ground is frozen, excessively wet or otherwise nontillable. If Contractor chooses to seed by a different method, he or she must present this alternative to the Owner's Representative for approval.
 1. BROADCAST METHOD: Broadcast seed with a drop spreader evenly onto a firm seed bed. Lightly rake seed into the soil bed to increase seed to soil contact. Sow half the seed with the sower moving in one direction and the remainder with the sower moving at right angles to the first sowing. Do not broadcast seed when wind velocity exceeds 15 mph.
 2. HYDROSEEDING METHOD: After seed mix has been broadcast, Hydroseeding can be started.
 - b. Hydroseed with wood cellulose fiber mulch at a rate of 92 pounds per 1,000 square feet or 4,000 pounds per acre.
 - c. For the hydroseeding process, a mobile tank with a capacity of at least 500 gallons shall be filled with water and the mixture noted above in the specified proportions. The resulting slurry shall be thoroughly mixed by means of positive agitation in the tank. Apply the slurry by a centrifugal pump using the hose application techniques from the mobile tank. Only hose application shall be permitted. At no time shall the mobile tank or tank truck be allowed onto the prepared hydroseed beds. The hose shall be equipped with a nozzle of a proper design to ensure even distribution of the hydroseeding slurry over the area to be hydroseeded and shall be operated by a person thoroughly familiar with this type of seeding operation.
 - d. Hydroseeding shall be a two-step process:
 - i. - Step one shall consist of spreading 100 percent of the required seed uniformly over the prepared loam bed so that the seed comes into direct contact

ITEM NO. 008-010: GRADING, LIMING, FERTILIZING AND SEEDING (SY) 81
INCLUDING HYDRO-SEEDING

with the soil. To mark the progress of the hydroseeding operation the Contractor may add 10 percent of the wood cellulose fiber mulch to the slurry.

ii - For slopes flatter than ten to one (10:1) step two shall consist of a separate application of wood cellulose fiber mulch immediately following the first step of hydroseeding noted above. Apply the wood cellulose fiber mulch at a rate of 2,000 pounds per acre.

C. In the event that the construction goes too late in the fall to allow for seeding of lawns in season, the Contractor will return in the spring to complete this work.

1. Any weed growth that has occurred on recently spread topsoil shall be removed by the Contractor prior to seeding. Seeding shall occur in season for Spring, with dates noted in this specific

PROTECTION

The Contractor shall take whatever measures are necessary to protect the grass while it is germinating. These measures include the provision of a mulch of genuine salt hay, approximately 1/4 inch thick over all banks to keep the seed from washing out of the banks.

These measures shall also include furnishing of warning signs, barriers, and other needed methods of protection.

MAINTENANCE

The Contractor shall take maintain the entire planted and seeded area until it is accepted by the Commission. Maintenance shall include watering, weeding, removal of stones which may appear and the first two cuttings of the grass. These shall be not closer than 10 days apart. All bare spots which become apparent as the grass germinates shall be reseeded by the Contractor at his own expense as many times as necessary to secure a good catch and the entire area shall be maintained and cut until it is judged by the Engineer that at least 95% of it is satisfactorily seeded.

BASIS OF PAYMENT

Finished grading, liming, fertilizing and seeding will be paid for at the contract unit price per square yard for grading, liming, fertilizing, and seeding. This price shall include grading, raking, liming, fertilizing, cost of seed and seeding (either by spray-method or conventional- method, at the Engineer's discretion), rolling, reseeding where necessary and maintenance.

Loam will be paid for under Item No. 007-010, "Loam Borrow".

Item 008-222: GEOSYNTHETIC EROSION CONTROL MATS (SY)**DESCRIPTION**

This Item is intended to inhibit soil erosion and promote the growth of vegetation on soil slopes. These mats should be placed below the manufacturer's recommended depth of plantable soil borrow, and the soil seeded to allow vegetation to take root and augment the effects of the erosion control mats.

Care shall be taken to perform installation of mats and slope soils so that adequate time exists for vegetation to take root before the first frost.

The Resident Engineer may choose to use this material at other locations if he/she deems it appropriate and necessary.

INSTALLATION

The mats shall be overlapped 12" on all seams. Mats shall be overlapped like roof shingles with the higher mat laid over the lower mat. Along every seam, the mats shall be staked into the ground with 1" by 1" wooden stakes (12" long) every five (5) feet.

MATERIALS

The mats shall be constructed of synthetic meshes and or webbings, and shall be manufactured for the purposes outlined above, and shall be recognized in the industry as being appropriate for commercial applications.

Method of Measurement

The Engineer shall measure the mats in place, with no allowance for overlaps, to attain the total square yardage.

Basis of Payment

This Item shall be paid at the Contract unit price bid per square yard, which will include furnishing and installing erosion control mats in compliance with this specification and shall be considered full compensation for all excavation, labor, tools, equipment, mats and stakes necessary to complete this work to the satisfaction of the Engineer.

Loam Borrow shall be paid for under Item 007-010.

Seeding shall be paid for under Item 008-010, Grading , Liming, Fertilizing and Seeding, including hyfro-seeding".

Item 008-444 Geotextile Fabric **(SF)****DESCRIPTION**

Geotextile fabric shall be installed as per contract drawings, and as requested by the Engineer. All contiguous sheets shall be **properly joined** using the manufacturer's recommendations, whether the sheets are simply overlapped a certain amount, stitched together to create a seam or another joined by another method recommended in manufacturer literature.

MATERIALS

Sheets shall conform to MHD Standard Specification M9.50.0.

The percentage of open area shall be 20% or greater to minimize clogging. The fabric shall be "US 670" as manufactured by US Fabrics (Cincinnati, OH), or approved equal having approximately 20% open area, and intended to minimize clogging of the fabric with fine soils while also minimizing sediments migrating into the peastone layer.

A material sample measuring 3' by 3' square and a Certificate of Compliance shall be submitted to the DCR Laboratory through the DCR Resident Engineer for approval prior to use on this project.

METHOD OF MEASUREMENT

The Resident shall record the area of the geotextile fabric, in place, and shall measure to the nearest square foot.

BASIS OF PAYMENT

Item 008-444 - "Geotextile Fabric" shall be paid based on the accepted Contract bid price per square foot. This payment shall include all labor, tools, equipment, transportation, shipping costs and all other incidental work, including the cost of stitching the sheets together as recommended by the manufacturer.

ITEM NO. 009-020: BITUMINOUS TACK COAT (Gallon)DESCRIPTION

Work under this item consists of furnishing and applying bituminous tack coat to all vertical and horizontal pavement surfaces immediately prior to any bituminous concrete pavement resurfacing operations as specified herein and as directed by the Engineer.

Tack coat shall be TYPE RS-1, conforming to the requirements of AASHTO, M-140 and shall be applied uniformly at the rate of one twentieth $1/20^{\text{th}}$ (0.05) Gallon per square yard. Before applying the tack coat, just prior to the placing of bituminous concrete, the area to be tack-coated shall be swept and cleaned to remove oil, grease or other foreign matter.

The Contractor shall prevent discoloration of edgestone/curbing when applying tack coat.

BASIS OF PAYMENT

Bituminous tack coat will be paid for at the contract unit price per gallon for "Bituminous Tack Coat", which price shall include sweeping and cleaning, furnishing and applying tack coat, all labor, materials, tools, equipment and all other work incidental thereof.

ITEM NO. 010-010: UNCLASSIFIED EXCAVATION (CY)**DESCRIPTION**

The work to be performed under this item of "Unclassified Excavation" shall consist of the excavation, removal and disposal as directed and required and as necessary for the prosecution and satisfactory completion of the work to be done under the several contract items of all the various kinds and types of materials that may be encountered in the work, except as otherwise provided in the specifications herein.

Unclassified excavation as described above shall include all materials such as earth, clay, sand, gravel, loam, peat, mud, boulders no more than one cubic yard in size, bituminous concrete roadway pavements, brush and debris of all kinds.

All materials obtained from the excavation of suitable materials shall be used to the extent required and as directed for backfilling the excavation and for such purposes as may be required at locations within the limits of the work contracted.

All suitable materials and surplus materials which cannot be used within the limits of the work shall be disposed of by the Contractor outside the limits of DCR property, without additional compensation.

METHOD OF MEASUREMENT

All excavation will be measured in units of cubic yards in its original position by the cross section method or, if not feasible, by the truckload or some other practicable method designated by the Engineer.

Quantities of measure by truckload method shall be subject to a deduction of Ten (10) percent to allow for loose bulking of the excavated materials when loaded into trucks.

BASIS OF PAYMENT

Unclassified excavation will be paid for at the contract unit price per cubic yard for "Unclassified Excavation" which price shall include all excavation, backfilling, removal of all brush and debris, disposal of unsuitable and surplus materials outside the limits of DCR property. All labor, tools, equipment, transportation and all other incidental work thereto.

**Item 009-010—Hot-Mix Asphalt (HMA) for Sports Courts, Sidewalks, Driveways, Patching
and Small Parking Lots (TON)**

DESCRIPTION

All hot-mix asphalt mixes shall conform to Mass Highway Department “Type I” mixes
(Base or SBC-37.5 and SBC-25.0,
Binder or SIC-19.0 and SIC-12.5,
“State Top or SSC 12.5” (w/ ½” aggregate) for Parkway use
& “3/8-inch State Top or SSC-9.5” for Sidewalk use).

Under this contract, the only anticipated paving work involves patching pipework trenches and paving around adjusted drainage structures. However, it may become necessary to perform small-scale repairs to adjacent DCR parkway, sidewalk or parking lot pavements during the course of the contract, at the Engineer’s discretion.

For Pavement “Replacement Areas”:

Fine-grading and compacting of sub-base for areas of sidewalk/pavement REPLACEMENT shall be considered mandatory and included in the bid unit price of this Item. If hot-mix asphalt pavement is NEW to that location, or the finish pavement elevations are changing substantially, as determined by the Engineer, refer to Item 021-010 for payment of fine grading and compacting sub-base.

Hot-Mix Asphalt Parkway/Parking Lot Pavement Repair: (The thicknesses listed below are **MINIMUMS**). The final thickness **MUST**, at a minimum, match the existing total parkway pavement thickness.

- 1-3/4” MassDOT-Type “I”-“State Top” surface course or SSC-12.5, minimum
- 2” MassDOT- Type “I” binder course or SIC-19.0 and SIC-12.5, minimum
- 4” MassDOT- Type “I” base course or SBC-37.5 and SBC-25.0, minimum

Hot-Mix Asphalt Sidewalk Repair, **WITH DRIVEWAY**:

- 1-1/4” MassDOT-Type “I”-“3/8 State Top” surface course or SSC-9.5, minimum
- 3” MassDOT- Type “I” binder course or SIC-19.0 and SIC-12.5, minimum

Hot-Mix Asphalt Sidewalk Repair, **WITHOUT DRIVEWAY**:

- 1-1/4” MassDOT-Type “I”-“3/8 State Top” surface course or SSC-9.5, minimum
- 2” MassDOT- Type “I” binder course or SIC-19.0 and SIC-12.5, minimum

The work to be done under this item shall consist of furnishing and placing plant-mixed hot-mix asphalt for construction of Sidewalks, Driveways, Patching and Small Parking Lots, and other various locations indicated on the contract Plans or as directed by the Engineer.

**Item 009-010—Hot-Mix Asphalt (HMA) for Sports Courts, Sidewalks, Driveways, Patching
and Small Parking Lots (CONT.) (TON)**

MATERIALS

All bituminous concrete shall be in accordance with the 1988 Massachusetts Highway Department Specifications for Highways and Bridges for Class I-1, Bituminous Concrete Pavements and Foundation Bases Sections 420, 460, 700 and M-3 where applicable, including the Supplemental Specifications dated June 6, 2006, and the Standard Special Provisions dated September 18, 2007.

&

SSC, SIC, SBC mixes shall be approved Mass DOT Mix Designs, submitted to the Department prior to paving for the following design levels:

Level 1- Sidewalks, patching, driveways and playing courts (50 gyrations).

Level 2 - Secondary Roads and parking lots (75 gyrations).

Level 3 - High volume, and heavy load roads (100 gyrations).

The Department shall be responsible for testing the temperature, asphalt content and gradation with the Contractor or Supplier responsible for testing the volumetric properties. The Contractor or Supplier shall adjust the mix to correct any out of specified range results as quickly as possible.

The lot of mix tested shall be a split sample, taken at random for each day's production or for each 750 tons. HMA lots will be considered Category C (Minor lot) from Table 450.3 of the 2010 Quality Assurance Specification for Hot Mix Asphalt Pavement.

METHOD OF CONSTRUCTION

Where existing roadway and bridge deck pavement is to be resurfaced, the bituminous concrete shall be placed in one course to the grade and contour approved by the Engineer and having a thickness of 3.5 to 4.5 times the nominal maximum size stone in the mix being placed.

BASIS of PAYMENT

“Hot-Mix Asphalt (HMA) for Sidewalks, Driveways, Patching and Small Parking Lots”, shall be paid for at the contract unit price per TON, complete in place, which price shall include all necessary tools, equipment, materials and labor (including tree-root-cutting and removal) to complete the installation of hot-mix asphalt per this specification, and to the satisfaction of the Engineer.

Fine-grading and compacting of sub-base for areas of sidewalk/pavement REPLACEMENT shall be considered mandatory and included in the bid unit price of this Item. If hot-mix asphalt pavement is NEW to that location, or the finish pavement elevations are changing substantially, as determined by the Engineer, refer to Item 021-010 for payment of fine grading and compacting sub-base.

Item 010-111 Testpit Excavation (CY)

DESCRIPTION

At the Engineer's discretion, the contractor shall excavate to the limits necessary.

This Item is intended to cover the contractor's cost of excavating areas where typically no pipe is found.

If, on the same day as a testpit is excavated, the testpit excavation brings about subsequent pipe repair, new pipe installation, removal of old pipe or any other repair or maintenance work already covered in the specifications of this contract, then costs associated with testpit excavation shall be considered part of that relevant contract item (pipe repair, etc.).

CONSTRUCTION METHODS

Any hot-mix asphalt or concrete encountered in the testpit area shall be neatly sawcut to provide clean pavement removal.

The excavation shall be protected by vehicular and pedestrian traffic, for the entire excavation process, to the satisfaction of the Engineer.

In the event that the testpit area is steel-plated for any amount of time, the excavated material shall be temporarily stockpiled in a safe DCR location and covered with suitable tarps, while further review of the testpit area is performed.

METHOD OF MEASUREMENT

All testpits shall be measured by the Engineer, by the cubic yard excavated, complete and in place.

Basis of Payment

Testpit Excavation will be paid for at the contract unit price per cubic yard. The unit price shall include any necessary clearing and grubbing in the testpit area, **all excavation, gravel borrow**, removal and disposal of excess materials off of DCR property, backfilling, **shoring and bracing**, dewatering, pumping, and all labor, tools, equipment and all work incidental thereto to excavate and backfill the testpit to the satisfaction of the Engineer.

*** PLEASE BE ADVISED ***

If, on the same day as a testpit is excavated, the testpit excavation brings about subsequent pipe repair, new pipe installation, removal of old pipe or any other repair or maintenance work already covered in the specifications of this contract, then costs associated with testpit excavation shall be considered part of that relevant contract item (pipe repair, etc.).

Any hot-mix asphalt replaced as part of the testpit backfilling operation, shall be paid for under Item 009-010 "Hot-Mix Asphalt for Patching".

DESCRIPTION

The work under this item shall consist of furnishing, installing and maintaining hay bales as directed by the Engineer.

The Contractor shall have sufficient quantities of hay bales on the project site at all times for day-to-day construction activities. Construction operations in new areas shall not begin unless, in the judgment of the Engineer, an adequate number of hay bales, and other erosion control devices, are on the project site and is ready for use as the work progresses.

CONSTRUCTION METHODS

Hay bales shall be supplied and placed along the bottom of slopes, ditches and/or where directed. The bales shall be butted tightly together and securely fastened by staking, or in a method approved by the Engineer.

The minimum size for hay bales shall be 3'x18"x18". The Contractor shall maintain the hay bale installations in a working condition, including re-staking, retying, position adjustment and other

incidental work. Sediment and debris accumulated behind the hay bale installations shall be removed and disposed of when the accumulation reaches a depth of twelve (12) inches, or when, in the judgment of the Engineer, the hay bale installations are no longer functioning adequately.

Hay bale installations shall be removed when, in the judgment of the Engineer, they are no longer necessary, or when the project is completed. The bales shall then become the Contractor's property and shall be disposed of off the site.

METHOD OF MEASUREMENT

Bales of hay for erosion control will be measured by the linear foot, complete in place.

BASIS OF PAYMENT

Hay bales for use in erosion control will be paid for at the contract unit price per linear foot for "Haybales for Erosion Control," which payment will be full compensation for all materials, tools, equipment, and labor incidental to and necessary for the completion of the work to the satisfaction of the Engineer.

Removal of accumulated sediment and debris from behind the hay bales will be included under this item without additional compensation.

DESCRIPTION

The work under this item shall consist of furnishing, installing, and maintaining fiber rolls (straw wattles), as directed by the Engineer.

The Contractor shall always have enough fiber rolls (straw wattles) on the project site for day-to-day construction activities. Construction operations in new areas shall not begin unless, in the judgement of the Engineer, an adequate quantity of fiber rolls (straw wattles) is on the project site and is ready for use as the work progresses.

MATERIALS

Straw Wattles shall consist of a superior synthetic photodegradable netting engineered for high water flow that is filled with a 100% weed free straw matrix..

CONSTRUCTION METHODS

Fiber rolls (straw wattles) shall be supplied and placed along the bottom of slopes, ditches and/or where directed. The fiber rolls (straw wattles) shall be overlapped by at least 6 inches and securely fastened by staking, or in a method approved by the Engineer.

The minimum size for fiber rolls (straw wattles) shall be 12 inches and cylindrical with closed ends and be at least 10 feet long. The Contractor shall maintain the fiber roll installations in a working condition, including re-staking, retying, position adjustment and other incidental work. Sediment and debris accumulated behind the fiber roll installations shall be removed and disposed of when the accumulation reaches a depth of twelve (12) inches, or when, in the judgement of the Engineer, the fiber roll (straw wattle) installations are no longer functioning adequately.

Fiber roll installations shall be removed when, in the judgement of the Engineer, they are no longer necessary, or when the project is completed. The fiber rolls (straw wattles) shall then become the Contractor's property and shall be disposed of off the site. See the attached sketch sheet for installation.

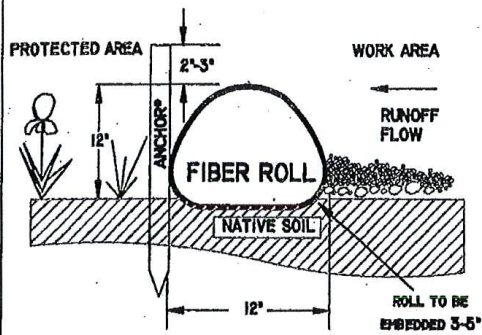
METHOD OF MEASUREMENT

Fiber rolls (straw wattles) for erosion control will be measured by the linear foot, complete in place.

BASIS OF PAYMENT

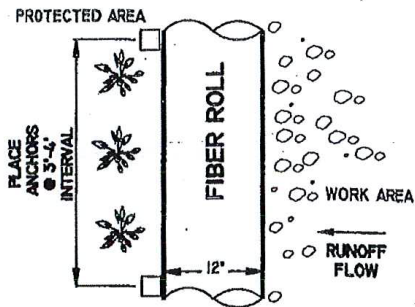
Fiber rolls for use in erosion control will be paid for at the contract unit price per linear foot for "Fiber Rolls (Straw Wattles) for Erosion Control," which payment will be full compensation for all materials, tools, equipment, and labor incidental to and necessary for the completion of the work to the satisfaction of the Engineer.

Removal of accumulated sediment and debris from behind the fiber rolls (straw wattles), as well as eventual removal and disposal of the fiber rolls themselves, will be included under this item, without additional compensation.

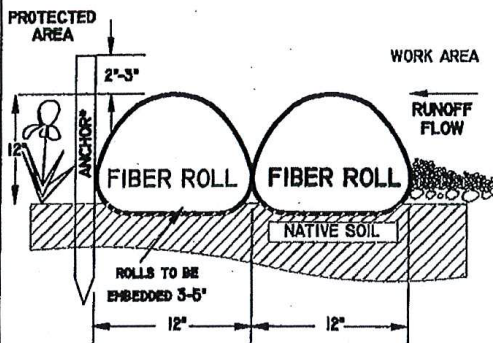


FIBER ROLL
SECTION VIEW

* ANCHOR STAKES TO BE 1"x1"x24" WOOD, AND DRIVEN TO 2'-3" ABOVE THE TOP OF THE FIBER ROLL.

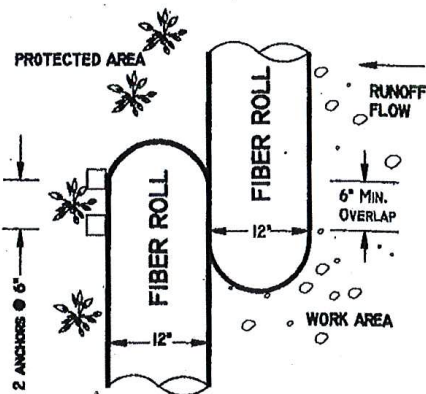


FIBER ROLL
TOP VIEW



FIBER ROLL
OVERLAP END VIEW

* ANCHOR STAKES TO BE 1"x1"x24" WOOD, AND DRIVEN TO 2'-3" ABOVE THE TOP OF THE FIBER ROLL.



FIBER ROLL
OVERLAP TOP VIEW

DESCRIPTION

The work under this item shall conform to the following specification:

Submittals

The Contractor shall submit a sample of the sedimentation fencing material for approval by the Engineer. This submittal shall include all manufacturer's literature necessary to verify that the sedimentation fence meets all of the requirements as specified herein.

Materials

Fabric for sedimentation fence shall be a woven fabric treated to resist degradation caused by exposure to sunlight. The fabric rolls shall have a minimum width of four (4) feet, and shall conform to requirements of AASHTO M288 for temporary silt fence

Fence posts shall be Oak (2 inch x 2 inch x 4 feet).

Construction Methods

1. Fence posts shall be installed 6 feet on center and angled slightly toward the embankment or anticipated source of run-off.
2. A trench 6 inches in depth and width shall be constructed along the fence line.
3. The fence fabric shall be placed on the uphill side along the fence line and fastened to each post in accordance with manufacturer's recommendations.
4. The bottom 8 inches of the fabric shall be draped into the trench, curled toward the source of run-off, and backfilled.
5. Sedimentation fence shall remain in place until a vegetative growth where applicable, has been established on the slopes and approved by the Engineer.

Construction Methods (Continued)

6. Sedimentation fence shall be installed along edges of rivers, brooks and swales in any areas that will be affected by silt run-off due to construction.
7. The Contractor shall pre-plan all installations of sedimentation fence with the Engineer for his/her approval.
8. The Contractor shall maintain all sedimentation fence installations in a working condition, including re-staking and other incidental work. Sediment and debris accumulated behind the sedimentation fence shall be removed and disposed of when the accumulation reaches a depth of twelve (12) inches, or when, in the judgment of the Engineer, the sedimentation fence is no longer functioning adequately.
9. The Sedimentation fence shall be removed when, in the judgment of the Engineer, they are no longer necessary, or when the project is completed.

Compensation**Method of Measurement**

Sedimentation fence for erosion control will be measured in place and the quantity to be paid for shall be the length actually constructed.

BASIS OF PAYMENT

Sedimentation fence for erosion control will be paid for complete in place at the contract unit price per linear foot, which price shall be full compensation for all fabric and posts, equipment and labor, materials, excavation and backfill, maintenance removal, and other incidentals required for the complete installation of this item.

The removal of accumulated sediment and debris from the sedimentation fence will be included under this item without additional compensation.

ITEM 010-444: Clearing & Grubbing, (including Small Tree Removal (Seven-Inch (7") diameter, or less)) (SY)

DESCRIPTION

Work under this Item consists of clearing brush and plantings of all types and their root-systems, and removing and discarding certain small trees (7-Inch diameter, or less) and their stumps and root-systems, where designated on Contract plans, or as directed by the Engineer. Where loaming and seeding will be required, or if the area is being prepared for pavement, the Contractor shall also break-up the ground down to a depth of four-inches (4").

This Item includes all work necessary to remove stump(s) and root systems. Trees/stumps and roots shall be disposed of off of DCR property, by the Contractor in a manner which shall not damage adjacent trees, structures or pavement areas. No burning of any trees/shrubs/plantings shall be permitted, and the Contractor shall dispose of all cleared and grubbed materials legally, off of DCR property.

The Contractor shall backfill the excavated area with on-site materials to the elevation approved by the Engineer. If in the opinion of the Engineer, on-site materials are not suitable, borrow material approved by the Engineer may be used as backfill.

The Contractor shall take all precautions to prevent injury to crops or damage other trees and shrubs on private, abutting property, as well as those within the right-of-way, and shall assume full responsibility for any damage. If any areas outside of the approved limits of construction are damaged during construction, they shall be restored to equal or better condition, including all grading, loaming, fertilizing and seeding by the Contractor at his/her own expense.

Method of Measurement

The DCR Resident Engineer shall measure the area to the nearest square yard.

BASIS OF PAYMENT

This Item shall be paid for at the Contract unit price per square yard for this Item, "Clearing & Grubbing, including Small Tree Removal (Seven-Inch (7") diameter, or less)", which includes stump removal/disposal & root-system removal/disposal. This price shall include any preliminary trimming, backfilling, removing and disposing of the tree as specified above, all labor, tools, equipment and all work incidental thereto.

ITEM 010-555: Removal of Tree (Diameter Greater than 7 Inches) (EA)**DESCRIPTION**

Work under this Item consists of removing and discarding certain large trees (7-Inch diameter, or greater) and their stumps and root-systems, where designated on Contract plans, or as directed by the Engineer. Where loaming and seeding will be required, or if the area is being prepared for pavement, the Contractor shall also break-up the ground down to a depth of four-inches (4").

This Item includes all work necessary to remove stump(s) and root systems. Trees/stumps and roots shall be disposed of off of DCR property, by the Contractor in a manner which shall not damage adjacent trees, structures or pavement areas. No burning of any trees/shrubs/plantings shall be permitted, and the Contractor shall dispose of all cleared and grubbed materials legally, off of DCR property.

The Contractor shall backfill the excavated area with on-site materials to the elevation approved by the Engineer. If in the opinion of the Engineer, on-site materials are not suitable, borrow material approved by the Engineer may be used as backfill.

The Contractor shall take all precautions to prevent injury to crops or damage other trees and shrubs on private, abutting property, as well as those within the right-of-way, and shall assume full responsibility for any damage. If any areas outside of the approved limits of construction are damaged during construction, they shall be restored to equal or better condition, including all grading, loaming, fertilizing and seeding by the Contractor at his/her own expense.

METHOD OF MEASUREMENT

The DCR Resident Engineer shall determine tree-diameter, by field measurement.

BASIS OF PAYMENT

Removal of trees with a diameter greater than seven inches (7") shall be paid for at the Contract unit price each for this Item, "Removal of Tree (Diameter greater than 7 Inches)". This price shall include any preliminary trimming, backfilling, removing and disposing of the tree as specified above, all labor, tools, equipment and all work incidental thereto.

ITEM 011-010: GRAVEL BORROW (Type “C” – 2” max stone size) (CY)

DESCRIPTION

When in the opinion of the Engineer, there is not sufficient suitable material available within the limits of the work to form the necessary embankments for sub-grading; for shoulders; for loam surfacing; or tree pits, the Contractor shall provide such additional material as may be necessary from outside the location.

MATERIALS

When gravel obtained from outside the limits of the work is specified for use in the sub-base, walks, filling voids in the stone base course or for any other purpose for which the existing material is not suitable, such gravel will be classified as gravel borrow. Gravel borrow shall be composed of hard, durable stones and sand, free from loam and clay. Sand shall be clean, well-graded and free from clay, loam or vegetable matter.

The maximum size of the stone in this Item shall be **two (2) inches** in the largest dimension. **(Type “C”)**

The gradation shall meet the following requirements:

<u>Sieve Designation</u>	<u>Percent Passing</u>
2 inch	100
½ inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-10

Method of Measurement

Gravel borrow used for sub-base, shoulders, gravel sidewalks, or for foundations for cement concrete walks or driveways will be measured in place after rolling or tamping. Gravel borrow used for other purposes will be measured in place after rolling or tamping.

ITEM 011-010: GRAVEL BORROW (Type “C” – 2” max stone size) (cont.) (CY)

BASIS of PAYMENT

All borrow will be paid for at the contract unit price per cubic yard of gravel borrow, which price shall include furnishing and placing the material, and finishing the surface, slopes or shoulders .

Gravel Borrow measured by the truck load or cart load will be subject to the following deduction for shrinkage:

Gravel Borrow-----10%

Said unit price shall include rolling and tamping for compacting, to the satisfaction of the Engineer. Compacting of gravel borrow in back-filling shall be done in 6" layers.

Gravel borrow shall also meet the requirements of the Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and Bridges, 1988 Edition, Section M1.03.0, Type “C”, where applicable including any revisions thereto.

Item 011-222 Controlled-density Fill (MHD Type 2-E “Flowable/Excavatable”) (CY)

DESCRIPTION

With the prior approval of the Engineer, controlled-density fill, C.D.F., conforming to MHD Type 2-E “Flowable/Excavatable”, can be used as a backfill material in paved areas, following trenching and utility (pipe, etc.) installations.

The Contractor shall be responsible for proper placement of C.D.F., including allowing adequate time for complete curing of the CDF, before paving is installed. In areas of high water table, the CDF needs additional curing time, and that time needs to be taken into account when scheduling paving operations.

As described in MHD Standard Specifications Materials Section,

M4.08.0 “Controlled-Density Fill” *(page III. 53 & 54 Metric):*

BASIS of PAYMENT

“Controlled-density Fill (MHD Type 2-E “Flowable/Excavatable”), shall be paid for at the contract unit price per CUBIC YARD for this Item, complete in place, which price shall include all necessary tools, equipment, materials and labor to complete the installation of MHD Type 2-E Controlled density Fill, per this specification, and to the satisfaction of the Engineer.

ITEM 012-010: SAFETY AND TRAFFIC CONTROLS for
CONSTRUCTION OPERATIONS (LS)

DESCRIPTION

The work under this item shall consist of furnishing, installing and maintaining all traffic drums, barricades, regulatory and warning signs, special lighting units (flashing arrow), reflectorized drums with warning lights, and all other traffic devices necessary to complete the required work. Actual layout shall vary to meet site constraints, and shall be subject to the approval of the Engineer. All items required for traffic control shall conform with the requirements of the “Manual on Uniform Traffic Control Devices for Streets and Highways”, published by the U.S. Department of Transportation, Federal Highway Administration, the plans specifications, and as directed by the Engineer. The Contractor shall be held responsible for damage to work due to any failure of signs and barricades to protect the work from traffic, pedestrians, or other causes.

MATERIALS

The description, materials, and construction methods for the work to be performed under this item shall conform to the relevant provisions of Section 850 “Traffic Controls for Construction and Maintenance Operations”, of the Massachusetts D.P.W. “Standard Specifications for Highways and Bridges” 1988 Edition, including any revisions thereto.

Reflectorized Drums with Flashing Light, to be approved by the Engineer, shall be approximately 18” in diameter and 36” in height. The drum shall be plastic and flat on one, or two sides to minimize rolling in the event of a knock-down.

Safety Signing for Construction Operations including positioning, repositioning, maintaining, and removing as needed and/or as directed, shall include regulatory signs, warning signs, supports, and all other incidental work.

Special Lighting Unit (Flashing Arrow) (see Section 850.46 of the M.D.P.W. 1988 Standards), shall consist of a black background panel measuring a minimum of 4 ft. by 8 ft. and shall contain at least twelve (12) #4412A (or equal) amber lights of approximately 6,000 initial maximum candlepower. Each light will have a flash rate of 25-40 flashes per minute. These units shall indicate an arrow to the left, an arrow to the right, or an arrow to both sides simultaneously to warn approaching traffic. The center of the arrow shall be mounted a minimum of nine (9) feet above the roadway. For night use, the unit shall be equipped for lamp intensity reduction to eliminate glare.

ITEM 012-010: SAFETY AND TRAFFIC CONTROLS for CONSTRUCTION OPERATIONS (cont.) (LS)

METHOD OF CONSTRUCTION

The Contractor shall provide, place and erect all necessary barricades, special lighting units, detour signing, and traffic drums.

The Contractor shall provide and maintain electrical services to illuminated barricades and signs and maintain adequate roadway lighting from dusk to dawn.

The Contractor shall maintain a minimum of one lane of traffic at all times. The minimum lane width is eleven (11) feet.

BASIS OF PAYMENT

Safety and Traffic Controls shall be paid at the contract lump sum price for the Item No. 012-010 "Safety and Traffic Controls for Construction Operations". The Contractor's bid price for this item should account for various aspects of work necessary to complete this item sufficiently. These things include the costs of barricades, traffic drums, signs, sign supports, special lighting units, all labor, materials, services, final removal and cleaning up. Payment shall be made on a monthly percentage basis, uniformly distributed over the length of the project. Twenty-four hour maintenance of the above safety devices for maintenance of the traffic shall be included in the lump sum price for the duration of the job for the convenience and protection of the public.

ITEM 013-010: TRAFFIC CONTROL SERVICES (Allowance)

DESCRIPTION

The Contractor shall furnish State Police (or local police officers or DCR Rangers (see **'ed note below)) for the protection of traffic and pedestrians on existing highways and walkways which will be interfered with by his operations. Where traffic is maintained, the work shall be guarded so that there will be a safe passageway for at all times for both pedestrian and vehicular traffic.

**** Note: For non-parkway work sites where work clearly does not interfere with vehicular traffic, DCR Rangers can be used as detail officers, at the Resident Engineer's discretion ****

The Contractor shall provide such Police Officers as may be deemed necessary by the Engineer, for the direction and control of traffic entering, passing through and leaving the sites of the work. Such officers shall wear regulation policemen's uniforms and may be reserve or special officers, subject to the control of, and paid by, the Contractor, or regular officers not subject to the control of and not paid directly by the Contractor. Compensation for regular police officers services shall be paid to the policemen's employers by the Contractor. Reserve or special police officers shall be paid by the Contractor at the prevailing wage rates paid to regular police officers in the city or town in which the work is being performed.

Only the State Police, shall be employed on all highways under the care and control or jurisdiction of the State Police. For DCR parkway work, detail officers shall be supplied by the State Police. If the State Police can not furnish a detail officer, then the local police will be notified so that they can serve as the detail officer on the parkway

Detail Officers employed by the Contractor on a temporary basis are considered to be employees of the Contractor for payment purposes only and the Contractor shall issue a Form 1099 or other such tax form as may be appropriate, to each member of the State Police/local police/DCR Rangers, so employed. The Contractor will have to send copies of those relevant tax forms to the Internal Revenue Service and the Massachusetts Department of Revenue in the usual manner prescribed by law.

BASIS OF PAYMENT

The Contractor shall include in his bid a lump sum allowance as set forth in the bid proposal section for the item, "Traffic Control Services". Payments to be made under this item shall only be for amounts actually paid by the Contractor to provide satisfactory traffic control services as stipulated herein. No allowance for overhead shall be included, as it is considered implicit in the costs of all other numbered items in the Proposal.

The Contractor shall submit, with each request for payment under this item, a certified statement listing names, dates, rate of pay, hours of service rendered and total amount paid to each officer. Rate of pay shall be the extra pay detail rate established by the current bargaining unit contract of the State Police, or the local police officer's rate established by his/her municipality, or the DCR Ranger detail rates whichever applies.

ITEM NO. 013-011 – Miscellaneous Site Specific Materials, Plantings, & Components

DESCRIPTION

The work under this Item shall consist of furnishing and installing incidental materials, plantings components, or site-specific elements related to civil drainage or paving projects, as directed and authorized in writing by the Engineer. Work may include, but is not limited to, the procurement and installation of:

- **materials needed for surface BMP's (swales, rain gardens, etc.) ,**
- **materials needed for sub-surface BMP's (Infiltration galleys, distilling basin, etc.),**
- **non-standard drainage structures, fittings, or appurtenances such as pre-cast box culverts or custom wing-walls**
- **other miscellaneous project-related items not otherwise covered under other Contract Items.**

This Item is intended for isolated or unforeseen scope additions necessary to maintain project continuity or meet field-specific requirements. It shall not be used in place of formal Contract Modifications for clearly definable work that warrants its own bid item.

Use of this Item requires prior written authorization from the Engineer and must be supported by adequate documentation demonstrating need, relevance, and cost justification.

CONSTRUCTION METHODS

Prior to the commencement of any work or ordering of materials under this Item, the Contractor shall submit a detailed cost proposal and all supporting documentation (including, where applicable, manufacturer's cut sheets, material quotes, or supplier invoices) for the Engineer's review and approval. No work shall proceed under this Item without explicit written authorization from the Engineer.

Upon completion of the approved work, the Engineer will inspect and verify the quantities and acceptability of the installed components. The approved cost proposal will form the basis for payment.

The Contractor shall prepare the cost proposal in accordance with the guidelines provided in Part III of this Contract, Article VII – Changes in the Work, Section 2 – Methods of Computing Equitable Adjustments.

BASIS OF PAYMENT

"Miscellaneous Site Specific Materials, Plantings, & Components" will be paid for at an allowance of \$350,000.00. This allowance may be increased or decreased, as needed.

Payment for this Item shall be made as needed, per approval, based on the final verified cost of materials and labor. Item 003-011 shall be considered full compensation for all labor, equipment, materials, tools, disposal of surplus or damaged components, and incidental work necessary to complete the approved scope of work in conformance with this specification and to the satisfaction of the Engineer.

Overhead and profit, (per Part III, Article VII., / Part 2 / Part A. / 1a. through 1e.) also form part of the basis of payment for this Item.
payment.

ITEM NO. 013-012: Backhoe/Loader (or Equal) w/ Operator – (Per Hour)

DESCRIPTION

Backhoe/Loader (or Equal) w/ Operator Item will be used as required by the Engineer as necessary, for scheduled or non-scheduled (emergency) work, providing excavation and trenching when said work is not suitable for compensation under other Items in this Contract. Equipment shall be wheel tire or rubber or steel track mounted, depending on the terrain conditions with 1.5 cubic yard front bucket, 3-foot wide (max) backhoe dipper, and various size buckets including trenching bucket and grading bucket. bucket or Engineer approved equal.

Backhoe/Loader (or Equal) w/ Operator will be used only as required in the opinion of the DCR Engineer. The Backhoe/Loader (or Equal) w/ Operator will be paid for to the nearest 0.25 of an hour (fifteen minutes) for the time actually working on the job site . Travel time to and from the job will be will not be included, therefore should be factored into the unit price, per hour cost.

BASIS OF PAYMENT

“Heavy Equipment Operator”, The above item shall be paid for at the contract unit price bid per HOUR. The price Item 013-012 shall only be used as outlined in the Description, to the complete satisfaction of the Engineer.

Included in the bid price for the item is the labor cost for the classification "**Heavy Equipment Operator**", which shall not be less than the prevailing wage rate for the service rendered at the specified location and in accordance with the wage rate schedule at the corresponding time of service, throughout the duration of the contract. It is the Contractor's responsibility to pay at least that wage rate as per Massachusetts General Laws Chapter 149 Section 26 to 27D inclusive. The labor time shall be shown on the record and paid to the nearest 0.25 of an hour (fifteen minutes) showing the starting and finishing time.

DESCRIPTION

Uses of the Labor item within this contract includes but is not limited to: helping equipment operators, supervisors, and other skilled labor when necessary, preparing construction sites by cleaning obstacles and hazards, loading or unloading construction materials, constructing or deconstructing temporary structures, such as scaffolding, removing fill or compacting earth, performing site clean-up, and any other labor activity as instructed from the DCR Resident Engineer or their supervisors.

The Labor will be used only as required in the opinion of the DCR Engineer. The Labor will be paid for to the nearest 0.25 of an hour (fifteen minutes) for the time actually working on the job site. Travel time to and from the job will be will not be included, therefore should be factored into the unit price, per hour cost.

BASIS OF PAYMENT

"Labor", The above item shall be paid for at the contract unit price bid per HOURLY. The price Item 013-013 shall only be used as outlined in the Description, to the complete satisfaction of the Engineer.

Included in the bid price for the item is the labor cost for the classification "Laborer", which shall not be less than the prevailing wage rate for the service rendered at the specified location and in accordance with the wage rate schedule at the corresponding time of service, throughout the duration of the contract. It is the Contractor's responsibility to pay at least that wage rate as per Massachusetts General Laws Chapter 149 Section 26 to 27D inclusive. The labor time shall be shown on the record and paid to the nearest 0.25 of an hour (fifteen minutes) showing the starting and finishing time.

Item 014-010 Furnish & Install 6"x18" Vertical Granite
Edgestone (Type VA-4) (STRAIGHT) (LF)

Item 014-111 Furnish & Install 6"x18" Vertical Granite
Edgestone (Type VA-4) (CURVED) (LF)

DESCRIPTION

Straight or curved edgestone shall be furnished and set where directed by the Engineer to the proposed lines and grades, on a bed of gravel borrow.

MATERIALS

Edgestone shall be hard and durable granite of a quality approved by the Engineer, free from seams or other imperfections and shall have horizontal beds. Natural color variations characteristic of the deposit will be permitted.

Type VA-4 edgestone shall conform with the following:

<u>Minimum Length</u>	<u>Width at Top</u>	<u>Depth</u>	<u>Min. Width at Bottom</u>
6 feet	6 inches	17 – 19 inches	4 in. (for 2/3 length)

The edgestone shall be out of wind. It shall be sawn at the top, split ten inches (10") down of the face, and the remainder of the face shall be straight split. The ends shall be squared with the top ten inches (10"), and so cut that they can be set with mortar in joints of not more than one inch (1"). New curved edgestone shall be accurately cut to the radius given. The gravel shall be good, clean and coarse.

CONSTRUCTION METHODS

The edgestone shall be placed to the proposed line and grade on a gravel foundation. The sub-grade of the foundation shall be twenty-four inches (24") below the top of the edgestone as set.

Upon this sub-grade, a foundation shall be made, consisting of good, clean, coarse gravel thoroughly rammed and compacted, so that it will be four inches (4") thick when completed. Upon this foundation, other gravel of the same kind shall be spread, and the edgestone laid so that joints are ½" to 1" wide. All spaces and voids under the curb shall be filled and compacted, so that the edgestone will bear throughout its entire length, and be at the line and grade required.

Any trench backfilling, sidewalk construction or other nearby work shall take care not to disturb the curbing or adversely affect the line and grade of the curbing.

Item 014-010 Furnish & Install 6"x18" Vertical Granite
Edgestone (Type VA-4) (STRAIGHT) (LF) (cont.)

Item 014-111 Furnish & Install 6"x18" Vertical Granite
Edgestone (Type VA-4) (CURVED) (LF) (cont.)

METHOD OF MEASUREMENT

All granite curb shall be measured by the Engineer, to the nearest hundredth of a foot (0.01') installed, complete and in place.

Basis of Payment

Item 014-010 Furnish & Install 6"x18" Vertical Granite Edgestone (Type VA-4) (STRAIGHT) & Item 014-111 Furnish & Install 6"x18" Vertical Granite Edgestone (Type VA-4) (CURVED) , shall be paid for at the contract unit price per linear foot.

The unit price for each Item shall include all pavement cutting, excavation, backfilling, compaction, cutting or trimming of stones, and all materials, labor, tools, equipment, transportation and all incidental work to conform with this specification, to the satisfaction of the Engineer.

Gravel Borrow shall be paid for under Item Number 011-010.

Loaming and Seeding, if required, shall be paid for using Items 007-010 & 008-010, respectively.

Item 014-222 Sloped Granite Edging (Type SB) in Cement Concrete Bedding (LF)

DESCRIPTION

At the Engineer's discretion, this Item may be utilized to provide a durable boundary for areas that do not require vertical granite curb.

MATERIALS

Type SB granite edgestone shall conform with the following:

<u>Min. Length</u>	<u>Max. Length</u>	<u>Thickness</u>	<u>Width of Face</u>
2 feet	6 feet	3 to 6 inches	11 to 13 inches

The dimensions of granite edging used must be at least four inches by twelve inches (4" x 12"). The minimum length installed shall be six feet (6'), unless otherwise approved by the Engineer.

Granite edging is subject to the inspection and approval of the Engineer, and shall be free of fissures in the stone, cracks or other defects. The edges shall be square so that joints between consecutive edging pieces are tight.

Cement concrete bedding shall consist of 3,000 psi compressive strength cement concrete

CONSTRUCTION METHODS

Refer to attached MHD Const. Stnd # 106.5.0, as it pertains to granite (not precast) edging installation. (*see next page*)

BASIS OF PAYMENT

"Sloped Granite Edging (Type SB) in Cement Concrete Bedding", shall be paid for at the contract unit price per LINEAR FOOT for this Item, complete in place, which price shall include granite edging 3,000psi cement concrete, pavement cutting, excavation, backfilling, compaction, cutting or trimming of stones, as well as all materials, labor, tools, equipment, transportation and all incidental work to complete the installation of sloped granite edging per this specification, and to the satisfaction of the Engineer.

Loaming and Seeding, if required, shall be paid for using Items 007-010 & 008-010, respectively.

Item 015-010 Cement Concrete In-Front &/OR In-Back of Edgestone (CY)

DESCRIPTION:

This Item shall consist of placing cement concrete to a depth of six inches (6") in front and/or in back of new or reset granite edgestone, as directed by the Engineer

MATERIALS:

Cement Concrete used for this Item shall conform to the requirements of the DCR Cement Concrete Standards for 2,000psi air-entrained cement concrete enclosed herein.

CONSTRUCTION METHODS

Before placing cement concrete, gravel borrow shall be brought to proposed sub-grade and compacted to the satisfaction of the Engineer.

On the roadway-side of any curbing, the cement concrete shall then be placed to within 1-3/4" of the proposed finished roadway surface to provide room for top-course hot-mix asphalt. For loam areas, the cement concrete shall be placed to within nine inches (9") of the proposed finished roadway surface to provide room for gravel and loam.

When complete, the concrete shall be kept moist for at least three days to allow for proper curing. Curing compound, or other method, approved by the Engineer may also be used. The concrete shall be protected from the weather by wetting and tarping, or blanketing, or other method to the complete satisfaction of the Engineer.

METHOD OF MEASUREMENT:

This Item shall be measured per cubic yard, complete and in place.

BASIS OF PAYMENT:

Payment for "Cement Concrete In-Front &/OR In-Back of Edgestone" shall be made by the accepted unit price per cubic yard, complete in place, which shall include furnishing, placing, curing and protecting the cement concrete, wetting and/or blanketing of the concrete, all labor, tools, equipment, materials and all incidental work subject to the approval of the Engineer.

Item 016-010 Hot-Mix Asphalt Berm (Type A)

(LF)

Description:

This Item is intended for areas not requiring vertical granite curbstones, or sloped granite edging, where “Type A” asphalt berm installation is approved by the Resident Engineer prior to installation. All berm shall be installed to correct line and grade, subject to the approval of the Engineer.

Materials:For berm placement by hand:

Hot-mix asphalt used shall comply with MassDOT Type “I”, 3/8” “State Top” surface course (or SSC-9.5 minimum), commonly used for sidewalk top

For berm placement monolithically during the installation of parkway surface top-course:

Hot-mix asphalt used shall comply with MassDOT Type “I”, “State Top” surface course (or SSC 12.5 minimum), acceptable for parkway surface course

(please refer to the Materials Section of the Hot-Mix Asphalt specification in this contract)

Construction Methods:

Type A berm can be placed in one of the 2 following ways:

-by hand, on top of previously installed binder course as a berm foundation

or

-monolithically during the installation of parkway surface top-course, if a special attachment (“wing”) is utilized on the right edge of the paver.

Please Note: The profile of the monolithic berm method may not conform exactly to the profile of the Type A berm (see attached detail sketch), but it is still acceptable if, in the opinion of the DCR Resident Engineer, the slope of the monolithic installation is reasonably close to the standard Type A cross-slope.

The most desirable method is for the berm to be installed monolithically, at the same time as the top course of hot-mix asphalt (if practical), so the berm will be more resistant to damage from snow plows.

The hot-mix asphalt shall be placed and compacted with a machine acceptable to the Engineer. The machine used shall be capable of spreading the mixture true to line and grade.

If at any time, before the acceptance of work, any soft or imperfect spots develop in the exposed surface of the berm, the berm shall be removed and replaced with new material and compacted, without any additional compensation.

Item 016-010 Hot-Mix Asphalt Berm (Type A) (continued) (LF)

Basis of Payment:

“Hot-Mix Asphalt Berm (Type A)”, shall be paid for at the contract unit price per LINEAR FOOT for this Item, complete in place, which price shall include all necessary pavement cutting, excavation, backfilling, compaction, as well as all materials, labor, tools, equipment, transportation and all incidental work to complete the installation of the hot-mix Type A berm per this specification, and to the satisfaction of the Engineer.

Loaming and Seeding, if required, shall be paid for using Items 007-010 & 008-010, respectively.

(see attached detail sketch for Type A berm)

Item 017-010 Dense Graded Crushed Stone (CY)

DESCRIPTION

The work under this item consists of furnishing, placing and compacting Dense Graded Crushed Stone in accordance with the specification, and as directed by the Engineer.

Dense Graded Crushed Stone shall consist of inert angular material derived from a stone quarry that is hard, durable stone and stone screenings, completely free of loam and clay, surface coatings and plastic materials.

Dense graded crushed stone used on this Contract shall pass the sieve analysis shown below, in "Materials".

MATERIALS

Sieve Designation	Percent Passing
2 inch	100
1-1/2 inch	70-100
3/4 inch	50-85
No. 4	30-55
No. 50	8-24
No. 200	3-10

This sub-base material shall combine crusher-run coarse aggregates of crushed stone and fine aggregates of natural sand or stone screenings uniformly pre-mixed with a predetermined quantity of water.

Coarse aggregate shall consist of hard, durable particles of stone fragments. Materials that break-up when alternately frozen and thawed or wetted and dried shall not be used.

Coarse aggregates shall have a percentage of wear, by the Los Angeles Test, of not less than 45.

Dewatering and Drainage:

Dewater as necessary to maintain dry excavations without extra costs to the DCR. The Contractor shall prevent surface and subsurface water from entering excavations to prevent possible softening of sub-grades, undercutting of footings and foundations, or other detrimental effects. The Contractor shall provide temporary water-control ditches, pumps and drainage systems as needed to control water. All fill materials shall be placed and compacted with moisture content controlled for optimum compaction.

(cont.)

Item 017-010 Dense Graded Crushed Stone (CY)

Moisture Control:

Control of moisture of sub-grades and fill materials by wetting and drying as needed to maintain moisture content within three percent (3%) of optimum moisture contents determined by ASTM D 1557, Method C. to minimum of 95% Maximum Dry Density.

Mucky, soft, or spongy soils shall be considered unsuitable for construction purposes. If the Contractor encounters unsuitable soil conditions, he shall contact the Engineer for instructions before proceeding further. If so directed, the Contractor shall excavate to suitable soil, backfill with specified crushed stone, and place specified filter fabric prior to placing sub-base courses.

FILLING, BACKFILLING & COMPACTION:

All areas to be filled shall be free of construction debris, refuse, compressible or degradable materials, and standing water. Do not place fill when fill materials or material below it are frozen. No fill material containing ice or frozen lumps shall be used.

The Contractor shall notify the Engineer when excavation is ready for formal inspection. Filling and backfilling shall not commence until conditions have been approved by the Engineer.

The Engineer reserves the right to disapprove of compaction equipment, if he/she deems the equipment to be unsuitable or inadequate to compact materials to the specified densities and/or within a reasonable amount of time.

REMOVAL OF SURPLUS OR UNSUITABLE MATERIALS:

Unsuitable excavated material and surplus excavated materials not required to complete site construction shall, unless otherwise directed by the Engineer, become the property of the Contractor, who shall remove the soil at no additional expense to the DCR.

CLEAN-UP:

At the end of all excavation, filling and grading operations and before acceptance of the work, the Contractor shall remove all debris, rubbish, etc. from the site, and shall dispose of them in a manner satisfactory to the Engineer. The premises shall be left clean, presentable, and in a state satisfactory to the Engineer.

METHOD OF MEASUREMENT:

This Item shall be measured per cubic yard, complete and in place.

BASIS OF PAYMENT:

Payment for "Dense Graded Crushed Stone" shall be made by the accepted unit price per cubic yard, and shall constitute full compensation for complete compliance with requirements of this Item specification, including all labor, tools, equipment, fine grading, compacting, materials, incidental work and construction methods.

Item 020-222: Galvanized Steel Channel for Underdrain (C-Shape # C10 x 15.3) (LF)

Item 020-333: Galvanized Steel Channel for Underdrain (C-Shape # MC10 x 22) (LF)

DESCRIPTION

It is anticipated that these Items will be utilized, on an as-needed basis, to replace existing, dilapidated steel channel underdrain at several of the underpasses on Storrow Drive and Soldiers Field Road, in Boston, as well as on Memorial Drive, in Cambridge. By design, these steel channels convey groundwater that comes up through joints in the old, buried, concrete slabs that lie beneath the roadway at several underpasses areas.

CONSTRUCTION METHODS (see attached sketch)

The Contractor shall field-measure the length of steel channel that is required and communicate that footage to the DCR Resident Engineer. In an effort to keep all channel lengths as long as possible, the DCR Resident Engineer shall determine the length(s) of channel needed and shall inform the Contractor what channel lengths to order. Based on those lengths, the Contractor shall order steel channel, coordinate the galvanizing process and let the DCR Resident Engineer know as soon as the galvanized steel channel is available for installation.

The Resident Engineer shall determine whether or not Item 020-222 or 020-333 shall be utilized for repairs. Item 020-222 (C-Shape # C10x15.3) should provide a void whose height is approximately two-inches (2") high for water to flow through, while Item 020-333 (C-Shape # MC10x22) should provide a void whose height is approximately three-inches (3") high for water to flow through. On any given segment of channel being replaced, for the entire segment between cleanouts, the size of steel channel used in the repair shall be consistent, and these two sizes shall not be mixed.

The roadway area where replacement channel is needed shall be marked out and neatly sawcut, so as to minimize excavation, while still allowing for the removal of the old steel channel. After excavation of asphalt and any intermediate soils, the old steel channel shall be removed.

OPTION 1: The DCR Resident Engineer deems it necessary to provide more cover over the new channel than existed over the old channel:

At the direction of the Engineer, the Contractor shall make two sawcuts into the buried concrete slabs to allow for the installation of new steel channel. All steel channel installed must be centered over the joint between the concrete slabs to insure that the void created under the channel's web intercepts groundwater. The depth of the sawcuts shall be approximately one half-inch (1/2") deeper than the flange width of the channel being used for repair. To minimize chipping and damage to the old concrete slabs, the Contractor shall make four (4) sawcuts, equally spaced, for the entire length of the steel channel being installed. The distance between the two "outside" sawcuts shall measure the width of the steel channel plus one-inch (1") between them. Between the sawcuts, concrete shall be carefully chipped-out no deeper than the depth of the sawcuts, and the concrete removed to allow for the installation of new steel channel.

Item 020-222: Galvanized Steel Channel for Underdrain (C-Shape # C10 x 15.3) (cont.) (LF)

Item 020-333: Galvanized Steel Channel for Underdrain (C-Shape # MC10 x 22) (cont.) (LF)

CONSTRUCTION METHODS (cont.)

Prior to installation of new channels, the Contractor shall install and finish smooth a layer of epoxy, to be pre-approved by the Engineer, and approved for use on cement concrete. The thickness of the epoxy shall be such that the top of the new channel, once installed, will be flush with the top of the old concrete slabs.

OPTION 2: The DCR Resident Engineer DOES NOT elect to cut into the old concrete slabs:

Any new steel channel shall be set directly on top of the cleaned off concrete slabs, and centered over the joint between the concrete slabs. The Contractor shall, at the Engineer's discretion, install a bed of epoxy approximately one-half (1/2") thick to create a smooth surface for bedding the channel.

For both options:

After channel placement, to keep from damaging the galvanized coating, the joints between adjacent steel channels **shall not be welded**, unless directed by the Resident Engineer. If directed, all weld areas shall be protected by a brush-on zinc coating approved by the Resident Engineer.

Immediately before asphalt paving commences, the entire channel installation shall be completely cleaned of loose debris and dust by the use of compressed air, and immediately covered with bituminous tack-coat, and at a minimum rate of one-twentieth (1/20) of a gallon per square yard, to the satisfaction of the Engineer.

Great care shall be exercised to insure that the invert elevations of any replacement channel(s) do not impede water flow through the entire drainage system. Upon request, the Contractor will verify invert elevations throughout any channel installation to the satisfaction of the Engineer.

MATERIALS

Steel:

All steel channels shall conform with ASTM A36

Item 020-222 shall conform with C-Shape # C10x15.3

Item 020-333 shall conform with C-Shape # MC10x22

Galvanizing:

All galvanizing shall be hot-dipped galvanizing, and shall conform with ASTM A 123 for fabricated products and ASTM A 153 for hardware. Galvanizer/coater shall supply a certificate of compliance that all coatings have been performed in accordance with The Society for Protective Coatings (SSPC) "QP-3" standards and procedures.

Item 020-222: Galvanized Steel Channel for Underdrain (C-Shape # C10 x 15.3) (cont.) (LF)

Item 020-333: Galvanized Steel Channel for Underdrain (C-Shape # MC10 x 22) (cont.) (LF)

MATERIALS (cont.)

Epoxy (for leveling): The Contractor shall furnish the Resident Engineer with documentation from the epoxy manufacturer certifying that the epoxy is compatible with cement concrete. Epoxy shall be subject to approval by the Resident Engineer.

Bituminous tack-coat: Tack Coat shall be Type RS-1, conforming with the requirements of AASHTO M-140.

METHOD OF MEASUREMENT

The DCR Resident Engineer shall measure any completed channel installation to the nearest hundredth (0.01) of a foot.

BASIS of PAYMENT

Both Item 020-222, "Galvanized Steel Channel for Underdrain (C-Shape # C10 x 15.3)" &

Item 020-333, "Galvanized Steel Channel for Underdrain (C-Shape # MC10 x 22)", shall be paid for at the Contract unit price per linear foot, furnished and installed. Each unit price shall cover the costs of steel channel, galvanizing, sawcutting of the roadway pavement, excavation, removal of old channels, sawcutting of the concrete slabs, removal of old concrete, bituminous tack coat, epoxy leveler, as well as all labor, materials, equipment, tools, transportation, disposal, and all other work required to comply with these Specifications, including welding at channel joints (if directed by the Engineer) and subsequent, brushed-on zinc-coating on any welded joints.

Item 021-010: Fine Grading and Compacting of Subgrade Areas

(SY)

DESCRIPTION

The shaping, trimming, grading and compacting of sub-grade materials, as shown on plans, or as directed by the Engineer, shall be constructed in accordance with this specification and in close conformity with the lines, grades and typical cross-sections shown on the plan, or established by the Engineer.

CONSTRUCTION METHODS

All soft or spongy material below the sub-grade shall be removed to a depth to be determined by the Engineer, and backfilled with satisfactory material. All material within a depth of up to two feet (2') below the subgrade in embankment or cut areas, as determined by the Engineer, shall conform to the requirements of Item 006-010 "Gravel Borrow – Type C", and shall be placed and compacted in layers not exceeding six (6) inches in depth, compacted measurement.

Before surfacing or sub-base is spread, the sub-grade shall be shaped to a true surface conforming to the cross-section of the proposed sidewalk, driveway or parking lot area and compacted in accordance with Item 006-010, "Gravel Borrow". All depressions and high spots shall be filled with suitable material or decreased, and such areas again compacted at no additional cost. A tolerance of one-half inch (1/2") above or below the finished sub-grade will be allowed ONLY for the construction of new parking lot areas provided that this one-half inch above or below grade is not maintained for a distance of more than twenty-five (25) feet, and that the required crown is maintained in the sub-grade. THERE IS NO ALLOWABLE TOLERANCE PROVIDED FOR CONSTRUCTION OF NEW SIDEWALKS OR DRIVEWAYS. Any portion of the sub-grade that is not accessible to a roller shall be thoroughly compacted with mechanical tampers, or by other adequate methods approved by the Engineer.

METHOD OF MEASUREMENT

Fine Grading and Compacting Sub-grade Areas shall be measured **once** for a given area, at the bottom of the plane of the sub-grade, by the horizontal square yard, regardless of how many lifts of gravel borrow/etc. are required to get to a grade acceptable to the Engineer.

BASIS of PAYMENT

Fine grading and compacting of sub-grade areas shall be paid for at the Contract unit price per square yard. This unit price shall include all labor, materials, equipment, tools and all other work required to grade, reshape and compact subgrade materials, to the satisfaction of the Engineer.

The removal and disposal of materials below subgrade will be paid for using Item 010-010, "Unclassified Excavation".

ITEM 022-010 – Emergency Response Mobilization**(EACH)****DESCRIPTION**

This Item is intended to compensate the Contractor for the costs associated with ensuring prompt response to sites that the DCR Resident Engineer deems to be in need of emergency repairs. This Item shall consist of preparatory work and operations for emergency response within a **four (4) hour period after notification from the DCR**. It shall include, but is not limited to, those preparations necessary for the mobilization (and demobilization) of personnel, equipment, supplies and incidentals to the project site for the establishment of facilities necessary for the work assignments.

METHOD of MEASUREMENT

This Item will be paid only once for each emergency repair location, as defined by the DCR Resident Engineer, regardless of how many hours or days the repair takes to complete.

BASIS OF PAYMENT

“Emergency Response Mobilization” shall be paid for at the Contract unit price, EACH, and shall constitute full payment for each emergency mobilization/demobilization.

For aspects of the emergency work that are related to regular contract items, all labor, material equipment to perform the emergency work will be paid for under the existing and appropriate contract items. In the event that the Contractor does not satisfy the four (4) hour response time requirement, payment for mobilization will be made only at the discretion of the DCR Resident Engineer.

For work outside the normal contract days/hours, or on a regularly observed holiday:

If the emergency repairs are made outside of the normal work days and/or working hours delineated in the contract, or are performed on a regularly observed holiday, then the DCR will accept, for review and consideration, documentation from the Contractor outlining the differential in labor rates, for additional payment in those instances. If approved, payment is limited to ONLY the differential in rates between regular and non-standard workhours. Also, if approved for payment, that payment shall constitute an “Amendment” to the Contract, with no allowance for bonding, profit or any other additional charges.

For any portion of the emergency repair that goes beyond this Item and other related, regular, delineated Contract items, the Contractor shall be paid by an Extra Work Order or Alteration, at the discretion of the DCR Resident Engineer.