

## INVITATION TO BID

The Town of Groton Town Manager will accept SEALED BIDS for the following:

### **Squannacook River Dam Repair**

All materials must meet Mass. Highway Department specifications for Highways and Bridges. Wages paid shall not be less than those prescribed by the Department of Labor and Workforce Development in accordance with Mass. General Laws, Chapter 149, Section 25-27D inclusive.

Specifications will be available at the Town Managers Office Town Hall, 173 Main Street in Groton between the hours of 8am and 4:00pm, Monday through Friday. Electronic copies can be obtained by requesting at [highway@townofgroton.org](mailto:highway@townofgroton.org)

MINIMUM QUALIFICATIONS OF BIDDERS: Bidders shall demonstrate successful construction of a minimum of four (3) dam specific projects in the past ten (10) years of similar size and complexity of rehabilitation of historic dams in the local area.

SEALED BIDS, clearly marked, will be received in the office of the Town Manager, 173 Main Street Groton, MA 01450, any time prior to **Thursday** February 5 at 10:00 AM at which time they will be publicly opened and read aloud

**The Town of Groton reserves the right to waive any informalities in bids, and to reject any and all bids if it is deemed to be in the best interest of the town.**

## **BID REQUIREMENTS**

### **GENERAL PROVISIONS**

All bids shall include labor rates and must conform to Massachusetts General Laws: Chapter 149, Section 26-27D Department of Labor and Workforce Development. The General Contractor is liable for payment of the prevailing wage. Any discrepancy between prevailing wage and actual wages paid is the responsibility of the General Contractor.

Quantities shown on bid sheet are approximate only and will be used for comparison of bids and to set the amount of the Bid Deposit.

As a minimum, all work shall be performed in compliance with Massachusetts Highway Department Standard Specifications for Highways and Bridges, 1988 as amended. All bids/proposals must be accompanied by a Bid Deposit in the amount of 5% of the total bid. This may be certified check or bid bond, payable to the Town of Groton.

### **BID SUBMITTAL**

Bids will be received at the Office of the Town Manager, 173 Main Street, Groton, MA 01450 until 10:00 am on February 5 2026 at which time they will be publicly opened and read aloud.

Each bid shall be submitted in a SEALED ENVELOPE MARKED "TOWN OF GROTON, Dam REPAIR BID."

The successful bidder must comply with all specifications.

**MINIMUM QUALIFICATIONS OF BIDDERS:** Bidders shall demonstrate successful construction of a minimum of three (3) dam specific projects in the past ten (10) years of similar size and complexity of rehabilitation of historic dams in the local area.

Bid Specifications may be obtained at the Town Managers office, 173 Main Street, Groton, MA, or electronically, preferred, on request.

**The Town of Groton, reserves the right to waive any informalities in bids, and to reject any and all bids if it is deemed to be in the best interest of the town.**

## INSTRUCTIONS TO BIDDERS

### 1.01 BIDDING DOCUMENTS

- A. Instructions to Bidders: This “Instructions to Bidders” contains important information about bidding procedures and is intended to provide guidance and assistance to bidders. This “Instructions to Bidders” does not change or supersede the provisions of M.G.L. Chapter 149, Section 44 A-J or Chapter 30, Section 39M, or any other sections or provisions of Law or the Contract Documents. This “Instructions to Bidders” is not part of the Contract Documents, unless specifically referenced or itemized in the Owner/Contractor Agreement.
- B. Definition any reference in the Bid Documents to the word “Town” when it comes to decisions, will mean the Town Manager or his appointed agent.

### 1.02 BIDDING REQUIREMENTS

**MINIMUM QUALIFICATIONS OF BIDDERS:** Bidders shall demonstrate successful construction of a minimum of three (3) dam specific projects in the past ten (10) years of similar size and complexity of rehabilitation of historic dams in the local area.

- A. Questions, Clarifications and Interpretations: Bidders shall promptly notify the Town Manager of questions, ambiguities, inconsistencies, errors, or omissions which they may discover upon examination of the Contract and Specification documents, the site and local conditions.
  - 1. Written Request Required: Submit written request for clarification and interpretation to the Town Manager by mail or FAX (978 .448-1112).
  - 2. Time Required: Requests for clarifications and interpretations must be received by the Highway Department at least five working days [Saturdays, Sundays, Holidays excluded] prior to the date bids are due.
  - 3. Town Response, Addenda: The response will be in the form of written addenda which shall become part of the Contract Documents. Clarifications and interpretations offered by the Agency in any form other than formal written addenda shall be invalid.
  - 4. Issuance of Addenda: Addenda will be issued by certified mail, return receipt requested to every bidder on record as having obtained bid documents. Copies of addenda will be available at locations where Contract Documents are filed for public inspection as listed in the advertisement and these instructions to bidders.
  - 5. Addenda Must Be Acknowledged: Bidders shall acknowledge Addenda in the spaces provided on the bid forms. Failure of a bidder to acknowledge Addenda in the spaces provided on the bid form may cause rejection of the bid or lead to protest. Failure of a bidder to receive any addenda shall not relieve it from any obligation under its bid as submitted.

### 1.03 ALTERNATES

There are no alternates for this bid

### 1.04 CONTRACT TIME

Contract Time: The period for this contract is expected to be until the completion of the project but not more than one year. The Town expects the work to begin as soon as practical after issuance of a notice to proceed and expects the work to be completed within the time period as indicated in the Owner/Contractor Agreement.

### 1.05 CONTRACT AWARD

- A. Bid Opening and Disposition: Bids will be opened in Public and bidders may be present. The Bids of the three lowest qualified bidders may not be withdrawn for thirty days [Saturdays, Sundays and legal holidays excluded] after receipt of bids.
- B. Contract Award: The contract will be awarded within thirty days after receipt of bids [Saturdays, Sundays and legal holidays excluded] to the lowest qualified eligible bidder. No bid shall be considered accepted until the Agency has issued a written Notice of Award sent by mail or delivered to the address given by the successful bidder on its bid form.
- C. Bids May Be Rejected: The Town reserves the right to waive informalities in any and all bids; to reject any and all bids; to revise the contract documents and re-bid, if it is in the public interest to do so.
- D. Definition of “Lowest Responsible and Eligible Bidder”: The “lowest responsible and eligible bidder” means the bidder whose bid is the lowest of those bidders who demonstrably possess the skill, ability and integrity necessary for faithful performance of the work and who meet the requirements for bidders set forth in M.G.L. 149 Sections 44A-H, 30B and 39M and who are not debarred from bidding under the same and who certify that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.
- E. MINIMUM QUALIFICATIONS OF BIDDERS: Bidders shall demonstrate successful construction of a minimum of three (3) dam specific projects in the past ten (10) years of similar size and complexity of rehabilitation of historic dams in the local area.
- F. Performance and References: Past performance shall be a factor in the award of the bid. Examples of this may be poor communication by the contractor which has led to scheduling problems, or lack of follow through with representatives of the contractor which have led to delays or lack of work and or poor performance. At least 3 references related to this type of work shall be submitted with the bid.

## **END OF INSTRUCTIONS TO BIDDERS**

## **GENERAL CONDITIONS**

### **A. WORK EXECUTION REQUIREMENTS**

1. Unless otherwise specified, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work.
2. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.
3. The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the work any unfair person or anyone not skilled in the work assigned to him.
4. All manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturers' written or presented directions and instructions unless otherwise indicated in the contract documents.

### **B. PERMITS AND REGULATIONS**

1. Permits and licenses necessary for the prosecution of the work shall be secured and paid for by the Town.
2. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the specifications are at variance therewith, it shall promptly notify the Town in writing and any necessary changes shall be adjusted as provided in the contract for changes in the work. If the Contractor performs any work knowing or if the Contractor should have known it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Town it shall bear all costs arising therefrom.

### **C. PROTECTION**

1. The Contractor shall continuously maintain adequate protection of all its work from damage and shall protect the Town property from injury or loss arising in connection with the contract. It shall make good any such damage, injury or loss, except such as may be directly due to errors in the contract documents or caused by agents or employees of the Agency, or due to causes beyond the Contractor's control and not to its fault or negligence. It shall adequately protect adjacent property as provided by law and the contract documents.
2. The Contractor shall take all necessary precautions for the safety of employees on the work site and shall comply with all applicable provisions of federal, state and municipal safety

laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. It shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of the public and workmen, and shall post danger signs warning against the hazards created by such features of construction, and it shall designate a responsible member of its organization on the work, whose duty shall be the prevention of accidents. The Contractor shall report the name and position of any person so designated to the DPW Director

3. The Contractor shall take all reasonable precautions for the safety of and shall provide all reasonable protection to prevent damage, injury or loss to all of the work and all material 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 subcontractors as well as other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
4. In the event of temporary suspension of work, or during inclement weather, or whenever the Town shall direct, the Contractor shall protect, and shall cause the subcontractors to carefully protect, the Contractor's and subcontractors' work and materials against, damage or injury from the weather. If, in the opinion of the Town any work or material shall have been damaged or injured by reason of failure on the part of the Contractor or any of its subcontractors so to protect the work, such materials shall be removed and replaced at the expense of the Contractor.
5. In an emergency affecting the safety of life or of the work or of adjoining property the Contractor is hereby permitted to act at its discretion, to prevent such threatened loss or injury; and it shall so act, without appeal, if so authorized or instructed.

#### D. ACCESS TO WORK AND TESTING

1. The Town and its representatives shall have access to the construction areas to observe the work at such times so as not to impede the progress of the work or increase any risk to the Contractor.

#### E. SUPERINTENDENCE AND SUPERVISION BY CONTRACTOR

1. The Contractor shall give efficient supervision to the work, using its best skill and attention. It shall carefully study and compare all specifications and other instructions and shall at once report to the Town any error, inconsistency or omission which it may discover, but it shall not be liable to the Town for any damage resulting from errors or deficiencies in the contract documents or other instructions by the Town unless the Contractor discovered, or should have discovered such error, inconsistency or omission and failed to notify the Town as set forth herein.

2. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract and shall use best efforts not to interfere with the activities of the surrounding area.
3. Unless otherwise provided in the contract documents, the Contractor shall provide, install, connect and pay for all labor, materials, equipment, tools, construction equipment, machinery, water, heat, utilities, transportation and other facilities and service necessary for the proper execution of the work, whether temporary or permanent and whether or not incorporated or to be incorporated into the work.

#### F. CORRECTION OF WORK

1. The Contractor shall promptly remove from the premises all work condemned by the Town as failing to conform to the contract, whether incorporated or not, and the Contractor shall promptly replace and re-execute its own work in accordance with the contract and without expense to the Town and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.
2. If the Contractor does not remove such condemned work within a reasonable time, fixed by written notice, the Town may remove it and may store the material at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten (10) days thereafter, the Town may, upon ten (10) days written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor. This remedy shall be in addition to all other remedies of the Town under the contract documents and applicable laws arising as a result of Contractor's breach of this contract.
3. The Contractor shall remedy any defects due to faulty material or workmanship and pay for any damage to other work resulting therefrom, which shall appear within a period of twelve (12) months from the date of substantial completion as defined in these General Conditions, and in accordance with the terms of any special guarantees provided in the contract. The Town shall give notice in writing of observed defects with reasonable promptness.

#### G. RIGHT OF THE DPW TO DO WORK

If the Contractor should neglect to perform the work properly or fail to perform any provision of the contract, the Town after five (5) days written notice to the Contractor may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

#### H. OPTIONS

This project has two options included in the scope of work that may or may not be done due to financial constraints. They are listed as Site Clearing and Stone Wall Joint Repair. The Town will determine during the course of the project whether or not this work will be

performed.

#### I. WITHHOLDING OF PAYMENTS

The DPW Director may withhold the whole or a part of any partial payment to such extent as may be necessary to protect the TOWN from loss on account of:

- a. defective work not remedied;
- b. claims filed or reasonable evidence indicating probable filing of claims;
- c. a reasonable doubt that the contract can be completed for the balance then unpaid;
- d. damage to another contractor; or
- e. failure to carry out the work in accordance with the contract documents.

Withholding of payments shall be in strict compliance with statutory requirements. When the reason for withholding a payment is removed, payment shall be made for the amounts previously withheld.

#### J. DAMAGES

Should either party to the contract suffer damages because of any wrongful act or neglect or omission of the other party or of anyone employed by it, claim shall be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the final payment, except in the case of subsequently discovered faulty work or materials.

#### L. ASSIGNMENT OR SUB-LETTING AS A WHOLE

Neither party to the contract shall assign the contract or sub-let it as a whole without the written consent of the other, nor shall the Contractor assign any monies due or to income due to it hereunder, without the previous written consent of the Highway Department

#### M. SUBCONTRACTS

- 1. Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the Agency.

#### N. EQUALITY OF MATERIALS

- 1. Where the name of an item, material or manufacturer is mentioned in the specifications, the intent is to establish a standard and in no way should be construed to exclude any item



or manufacturer not mentioned by name, but whose product meets the specifications as to design, utility, and quality. Final decision shall rest with the DPW Director as to its acceptability (see G.L. c.30, section 39M).

2. Where more than one name of an item, material or manufacturer is mentioned in the specifications, the Contractor shall have the right to use any one so named without further approval as to design, utility and quality.

O. PERFORMANCE AND LABOR & MATERIALS PAYMENT BONDS

Before contract signing, the Contractor shall furnish the Town with a performance bond and a labor and materials payment bond, each in the amount of one hundred percent (100%) of the contract price, to insure completion of the work and payment for all labor and materials furnished on the project.

P. CONTRACTOR'S LIABILITY INSURANCE

1. The Contractor shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of or result from the Contractor's operations under the contract, whether such operations be by itself or by any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
  - a. Claims under Workmen's Compensation, disability benefit and other similar employee benefit acts;
  - b. Claims for damages because of bodily injury, occupational sickness, disease or death of its employees, and claims insured by usual personal injury liability coverage;
  - c. Claims for damage because of bodily injury, sickness, or disease, or death of any person other than employees, and claims insured by usual injury liability coverage; and
  - d. Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.
2. The insurance required by the above sub-paragraph 1 shall be written for not less than the following minimum limits of liability:
  - a. Workmen's Compensation: Statutory  
Employers' Liability: \$500,000.00
  - b. Comprehensive General Liability: Bodily Injury  
Each Person/Each Occurrence: \$1,000,000 / \$1,000,000.

- Each Occurrence/Aggregate: \$1,000,000 / \$1,000,000.
- c. Comprehensive Automobile Liability: Bodily Injury
- Each Person/Each Occurrence: \$500,000 / \$1,000,000.  
Each Occurrence/Aggregate: Property Damage  
\$1,000,000
- d. Excess Liability: Umbrella Form  
\$5,000,000.
- e. The Comprehensive General Liability Insurance Policy (Broad Form) shall include coverage for Premises- Operations, Elevators (if any), Independent Contractors, Products-Completed Operations, liability for damage to property, and for damage to underground pipes and utilities caused by digging with mechanical equipment.
- f. The Comprehensive Automobile Liability Insurance Policy shall be written to include Owned, Hired, and Non-Owned Vehicles and it shall provide Extra Territorial Coverage.
3. The above insurance policies shall also be subject to the following requirements:
- a. Certificates of insurance acceptable to the Town shall be addressed to and filed with the Town Manager prior to the commencement of the work. Renewal certificates shall be addressed to and filed with both parties at least ten (10) days prior to the expiration date of the required policies. The following shall be listed on the certificates as additional named insured:
- The Town Of Groton  
173 Main Street  
Groton Ma 01450
- Or other entity
- b. No insurance coverage shall be subject to cancellation without at least fifteen (15) days prior written notice forwarded by registered or certified mail to the DPW Director. Both parties shall also be notified of the attachment of any restrictive amendments to the policies.
- c. All premium costs shall be included in the Contractor's bid.
4. All subcontractors employed by the Contractor shall purchase and maintain liability insurance conforming to the requirements in the above sub-paragraphs 1 through 3, prior to commencing work at the site.

Q. CONTRACTOR'S CONTRACTUAL LIABILITY

1. The Contractor hereby assumes the entire responsibility and liability for any and all injury to or death of any and all persons, including the Contractor's employees, and for any and all damage to property caused by, resulting from, or arising out of any act, omission, or neglect on the part of the Contractor or of any subcontractors or of anyone directly or indirectly employed by any one of them, or of anyone for whose acts any one of them may be liable in connection with operations under the contract.
2. The Contractor further agrees to indemnify and hold harmless the Town, its agents, employees and representatives, from and against all claims, all damages, losses and expenses, including attorney's fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense is:
  - a. attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and
  - b. is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any one of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

R. KNOWLEDGE OF AND COMPLIANCE WITH LAWS, ETC.

The Contractor shall keep itself fully informed of all existing and future state and federal laws and municipal by-laws, ordinances, rules, and regulations and of all orders and decrees of any bodies or tribunals having jurisdiction in any manner affecting those engaged or employed in the work, of the materials used in the work, or in any way affecting the conduct of the work. If any discrepancy or inconsistency is discovered in the specifications or contract for this work to be in violation of any such law, by-law, ordinance, rule, regulation, order or decree, the Contractor shall forthwith report the same in writing to the DPW Director. It shall, at all times, itself observe and comply with and shall cause all its agents, employees, and subcontractors to observe and comply with all such existing and future laws, by-laws, ordinances, rules, regulations, orders and decrees; and shall protect and indemnify the municipality, and the Town and agents against any claim or liability arising from or based on any violation whether by it or its agents, employees, or subcontractors or any such law, by-law, ordinance, rule, regulation, order or decree.

S. FUNDING AND AWARD

This entire project is **contingent** on a successful Town Meeting vote at the Spring 2026 Meeting in April. Pricing for the project will be held by contractor until the conclusion of Town meeting and subsequent bond question and be awarded with a successful vote authorizing the repairs on each count.

U. NOTICE

Any notice required by any of the project documents shall be provided by registered mail or delivery as follows:

To the Groton DPW:

Mark Haddad  
Town Manager  
173 Main Street  
Groton Ma 01450

To the Contractor:

---

---

---

SECTION VII  
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_  
\_\_\_\_\_, as Principal, and \_\_\_\_\_  
\_\_\_\_\_, as Surety, are held and firmly bound unto the Town Of \_\_\_\_\_ in  
the sum of \_\_\_\_\_  
dollars (\$ \_\_\_\_\_) lawful money of the United States of America, to be paid to  
the Town Of \_\_\_\_\_, 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 Highway Department bearing the  
date of \_\_\_\_\_, for the construction of the project entitled  
.

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, 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 effect.

IN WITNESS WHEREOF, we hereunto set our hands and seals this \_\_\_\_\_ day of  
\_\_\_\_\_.

By: \_\_\_\_\_  
Principal (Seal)

By: \_\_\_\_\_  
Surety (Seal)

Countersigned by Massachusetts Resident Agent

Surety Agent: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

SECTION VIII

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_  
as Principal, and \_\_\_\_\_  
as Surety, are held and firmly bound unto the Town Of \_\_\_\_\_ in the sum of  
\_\_\_\_\_ dollars (\$) lawful money of  
the United States of America, to be paid to the Massachusetts Development Finance Agency, 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 Highway Department bearing the date  
of \_\_\_\_\_ for the construction of the project entitled  
.Annual

Now the condition of this obligation is such that if the principal well and truly keeps and performs  
all the undertakings, covenants, agreements, terms and conditions of said contract and any  
extensions thereof that may be granted by the Highway Department and during the life of any  
guaranty required under the contract, with or without notice to the surety, 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 said modifications, alterations, changes or additions being  
hereby waived, then this obligation shall become null and void; otherwise, it shall remain in full  
force and effect.

In the event that the contract is abandoned by the Contractor, or is terminated by the Highway  
Department said surety agrees that it shall, if requested in writing by the Highway Department take  
such action as is necessary to complete the contract.

IN WITNESS WHEREOF, we hereunto set our hands and seals this \_\_\_\_\_ day of  
. By: \_\_\_\_\_

Principal (Seal)

By: \_\_\_\_\_  
Surety (Seal)

Countersigned by Massachusetts Resident Agent

Surety Agent: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

## **OSHA Compliance**

The undersigned certifies under pains and penalties of perjury that all work pertaining to this bid is in compliance with M.G.L. c.30. sec. 39S as further described below;

Section 39S. (a) As used in this section the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. Any person submitting a bid for, or signing a contract to work on, the construction, reconstruction, alteration, remodeling or repair of any public work by the commonwealth, or political subdivision thereof, or by any county, city, town, district, or housing authority, and estimated by the awarding authority to cost more than \$10,000, and any person submitting a bid for, or signing a contract to work on, the construction, reconstruction, installation, demolition, maintenance or repair of any building by a public agency, estimated to cost more than \$10,000, shall certify on the bid, or contract, under penalties of perjury, as follows:

(1) that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

(b) Any employee found on a worksite subject to this section without documentation of successful completion of a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration shall be subject to immediate removal.

(c) The attorney general, or his designee, shall have the power to enforce this section including the power to institute and prosecute proceedings in the superior court to restrain the award of contracts and the performance of contracts in all cases where, after investigation of the facts, he has made a finding that the award or performance has resulted in violation, directly or indirectly, of subsection (b), and he shall not be required to pay to the clerk of the court an entry fee in connection with the institution of the proceeding.

\_\_\_\_\_  
(Signature of individual responsible)

\_\_\_\_\_  
(Name of Business)

## STATEMENT OF TAX COMPLIANCE/NON-COLLUSION

As required under Chapter 233 and 701 of the Massachusetts Acts and Resolves of 1993, all bidders certify to the following, by signing this page in the space indicated below:

1. The undersigned certifies under the penalties of perjury that his bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this paragraph, the word person shall mean any natural business or legal entity.
2. Pursuant to M.G.L. C62C S49A, I certify under the penalties of perjury that I, to the best of my knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

Social Security Number or Federal Tax Identification Number of

Bidder: \_\_\_\_\_

Date: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Business Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Title: \_\_\_\_\_



## CERTIFICATE OF VOTE

I, \_\_\_\_\_, Clerk of  
\_\_\_\_\_, hereby certify that at a  
meeting of the Board of Directors of said Corporation duly held on date  
\_\_\_\_\_, at which a quorum was present (date must be earlier  
than contract) and voting throughout, the following vote was duly passed and is now in full force  
and effect:

“VOTED: That \_\_\_\_\_  
(Name of Officer Authorized to Sign for Corporation)

be and hereby is authorized, directed and empowered for, in the name and on behalf of this Corporation to  
sign, seal with corporate seal, execute, acknowledge and deliver all contracts, bonds, and other  
obligations of this Corporation, the execution of any such contract, bond or obligation by such

\_\_\_\_\_  
(Name of Officer)

to be valid and binding upon this Corporation for all purposes, and that a certificate of the Clerk of this  
Corporation setting forth this vote shall be delivered to the Town of Groton; and that this vote shall  
remain in full force and effect unless and until the same has been altered, amended or revoked by a  
subsequent vote of such directors and certificate of such later vote attested by the Clerk of this  
Corporation is delivered to the Town of Groton.”

I further certify that \_\_\_\_\_, is the duly  
(Name of Officer)  
elected \_\_\_\_\_ of said Corporation.  
(Title)

Signed: \_\_\_\_\_  
(Clerk-Secretary)

Place of Business: \_\_\_\_\_

Date of Contract: \_\_\_\_\_

In the event that the Clerk or Secretary is the same person as the Officer authorized to sign the  
contract or other instrument for the Corporation this certificate must be countersigned by another  
officer of the Corporation.

## BIDDER QUALIFICATION FORM

### ARTICLE 1.

This form is part of, and shall be returned with, the BID FORM. Failure to accurately complete and return this form may be the basis for disqualification from consideration of award. Additional, or separate, sheets of paper may be used, if desired by the bidder. Company flyers, marketing materials, promotional write-ups and similar prepackaged materials are not desired and shall not be considered a substitute for this form.

### ARTICLE 2.

**MINIMUM QUALIFICATIONS OF BIDDERS: Bidders shall demonstrate successful construction of a minimum of three (3) dam specific projects in the past ten (10) years of similar size and complexity of rehabilitation of historic dams in the local area.**

The Contractor shall submit signed documentation that he meets the Minimum Qualifications of Bidders and shall demonstrate his construction experience of rehabilitation of historic dams in the local area by submitting with his bid the following information for each project:

1. Project Name and Location
2. Dates of Construction
3. Contact information for Project Owner or Engineer
4. Cost of Construction
5. Brief narrative of construction elements included in contract (e.g., spillways, training walls, dredging, water control, underwater work, gates, pipe lining, concrete work, stone/masonry work)

#### Project 1.

Project Name and Location \_\_\_\_\_

\_\_\_\_\_

Dates of Construction \_\_\_\_\_

Contact Information of Project Owner or Engineer \_\_\_\_\_

\_\_\_\_\_

Cost of Construction \_\_\_\_\_

Brief Narrative of Construction \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project 2.

Project Name and Location\_\_\_\_\_

\_\_\_\_\_

Dates of Construction\_\_\_\_\_

Contact Information of Project Owner or Engineer\_\_\_\_\_

\_\_\_\_\_

Cost of Construction\_\_\_\_\_

Brief Narrative of Construction\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project 3.

Project Name and Location\_\_\_\_\_

\_\_\_\_\_

Dates of Construction\_\_\_\_\_

Contact Information of Project Owner or Engineer\_\_\_\_\_

\_\_\_\_\_

Cost of Construction\_\_\_\_\_

Brief Narrative of Construction\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ARTICLE 3.

1. COMPANY NAME \_\_\_\_\_
2. PERSON COMPLETING THIS FORM \_\_\_\_\_
3. TITLE OF PERSON COMPLETING THIS FORM \_\_\_\_\_
4. NUMBER OF YEARS COMPANY HAS BEEN IN BUSINESS \_\_\_\_\_

5. LIST PROJECTS CURRENTLY IN PROGRESS OR COMPLETED WITHIN THE PAST 3 YEARS.

---

---

---

---

---

---

---

---

The undersigned certifies that the above information is true and accurate and that the Company submitting this Bid meets the Minimum Qualifications of Bidders.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

Company \_\_\_\_\_

## BID FORM

NOTE: THE TOTAL PRICE FOR EACH ITEM MUST BE WRITTEN IN WORDS AND FIGURES.  
IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN.

BID ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT BID PRICE	TOTAL PRICE
----------	-------------	------	----------	----------------	-------------

1.0 General Conditions

LS

1

TOTAL PRICE IN WORDS: \_\_\_\_\_

2140.1 Control of Water

LS

1

TOTAL PRICE IN WORDS: \_\_\_\_\_

02220.1 Concrete Demolition

CU. FT.

2000

TOTAL PRICE IN WORDS: \_\_\_\_\_

02221.1 Site Clearing

LS

1

TOTAL PRICE IN WORDS: \_\_\_\_\_

03310.1 Portland Cement Concrete

CU. YD.

100

TOTAL PRICE IN WORDS: \_\_\_\_\_

04900.1 Stone Wall Joint Repair

SQ. FT.

1500

TOTAL PRICE IN WORDS: \_\_\_\_\_

04900.1 Low Lever Gate replacement

Quantity

1

TOTAL PRICE IN WORDS: \_\_\_\_\_

---

---

CARRIED FORWARD \_\_\_\_\_

BROUGHT FORWARD \_\_\_\_\_

TOTAL BASE BID \_\_\_\_\_

TOTAL BASE BID IN WORDS \_\_\_\_\_

---

#### ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for the period noted in the **INSTRUCTIONS TO BIDDERS IN SECTION S**

If this Bid is accepted by the Owner within the time period in **SECTION S** stated above, the BIDDER agrees to:

- Execute the Agreement within five (5) days of receipt of Notice of Award.
- Furnish the required Performance Bond and Labor and Material Payment Bond within seven (7) days of receipt of Notice of Award.
- Commence work within fourteen (14) days after written Notice to Proceed.

If this Bid is accepted within the time stated, and we (Bidder) fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by reason of our (Bidder) failure, limited in amount to the lesser of the face value of the security deposit or the difference between this Bid and the Bid upon which the Contract is signed.

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

#### 4.00 CONTRACT TIME

If this Bid is accepted, the BIDDER hereby agrees to commence WORK under this Contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT such that the facility is operational in 180 calendar days.

#### 5.00 ADDENDA

The following Addenda have been received. The modifications to the Contract Documents noted therein have been considered and all costs thereto are included in the Bid Price.

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

BID FORM SIGNATURE(S)

The Corporate Seal of

---

(Print the full name of Bidder's Proprietorship, Partnership, or Corporation)

was hereunto affixed in the presence of:

---

(Authorized signing officer)

(Title)

(Corporate Seal)

---

(Authorized signing officer)

(Title)

---

(Notary Public)

(Date Commission Expires)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.



## 02140 CONTROL OF WATER

### DESCRIPTION

- A. The work shall consist of the control of surface water runoff, pond water, river water and groundwater as needed to perform the required construction in accordance with the Specifications. The work includes but is not limited to all labor, materials, and equipment to:

1. Design, furnish, install, operate, maintain and remove all necessary temporary impounding works, connections, cuts, seals, sandbags, fabric, membranes or other associates materials, equipment and coordination to install a temporary cofferdam to create a dry working area. Included in this work is underwater diving, as needed by the Contractor, to complete installation, maintenance and removal of the cofferdam and the work of the contract.

The temporary cofferdam shall consist of a flexible, or hardened, membrane type with rigid frames and be capable of safely withstanding up to a minimum of 9 ft of water head at all locations. Porta-dams and similar type/design/functionality cofferdams are acceptable provided they allow work to be completed in the dry.

Steel sheeting cofferdams are acceptable if the installation operation of the sheeting includes the use of small equipment to minimize disturbance to the surrounding area.

Earth berms, concrete blocks, rubble, stones, crib walls, trench boxes, large sand bags, water tubes, water bags and other similar materials, or any combination thereof, are not acceptable for use as cofferdams on this project if the cofferdam system would cover more than a 6 ft wide area along the cofferdam alignment or impart a weight sufficient to permanently compress the underlying soils. Typical, hand placed sand bags, weighing less than 100 lbs. each, and having a maximum dimension of 24 in. are allowed as part of the cofferdam system.

2. Design, furnish, install and operate all, temporary cofferdams, check dams, pumps, piping, sumps, channels, ditches and other devices and equipment which will control and remove seepage, surface water, pond water and precipitation from the work areas.
3. The work shall be completed in phases to allow water to continue to flow over at least a portion of the spillway at all times. Configuration, alignment and design of the cofferdams shall be by the Contractor and the cofferdams shall be sufficient to complete the work in the dry. Pond water/river water shall be diverted around the cofferdams.
4. Contractor shall maintain the pond water level upstream of the cofferdams as shown on the drawings at the normal operating pool elevation. If the Contractor can not maintain the water level within the normal operating range, for whatever reason, the Contractor shall inform the engineer in writing immediately or, if it is evident based on current conditions in the work area and river levels, that the pond level will drop or rise dramatically, the contractor shall inform the engineer in writing immediately.

In response to low or high pond levels and if it is determined by the engineer that the contractor's actions have contributed to the low or high pond level, the engineer will direct the contractor to take immediate action to prevent additional lowering or flooding of the

river. This action could include, but are not limited to, providing additional cofferdam structures, sealing leaks in the cofferdam, supplying, setting up and operating additional pumps and/or temporarily abandoning the cofferdam and allowing the work area to fill until the contractor submits an acceptable plan in writing to the engineer and gains written approval from the engineer to safely complete the work and maintain the required water levels. This work shall be at no additional cost to the owner.

5. Dewater as necessary to enable construction of site improvements, including demolition, excavation, forming, concrete placement, backfilling and all other work in-the-dry. The Contractor shall be responsible for control, pumping, and legal discharge of groundwater, surface water, precipitation, runoff and other water which enters or accumulates in excavations or the work area to reach required excavation elevations, maintain stable subgrades and allow construction to be conducted and completed in-the-dry.
6. Dewatering and maintaining a dry work area will require the construction and maintenance of localized, temporary sumps, trenches, dewatering wells, pumps, hoses, lines, pipes and associated earthwork dewater equipment and the Contractor shall provide all necessary equipment, materials and labor to design, construct, maintain, operate and remove the temporary dewatering system.
7. Remove all such temporary works and equipment after they have served their purposes.
8. Provide for control of soil erosion and sediment transport in accordance with the specifications and all applicable local, state and federal regulations.

#### 1.01 SITE CONDITIONS

- A. Site conditions are shown on the contract drawings.
- B. The Contractor shall visit and walk the limits of the site prior to beginning the work and familiarize himself with the site conditions.

#### 1.03. SUBMITTALS

- A. Prior to the start of work, the Contractor shall furnish the following to the DPW Director:
  1. A complete and detailed plan, in writing, for controlling surface water, groundwater, storm runoff, stream flow, pond water and storm flow throughout the performance of all construction activities.
  2. Design of, and requirements for, installation, sequencing, monitoring, maintaining, sealing and bracing for the cofferdam. A proposed cofferdam alignment is show on the drawings for the contractor's reference. The final cofferdam alignment will be proposed by the Contractor, sufficient for the Contractor to complete the work, and submitted for acceptance by the engineer.
  3. Shop drawings showing proposed types and details of pond water, surface water, stormwater and groundwater control systems including:
    - a. Sizes, capacities, locations and depths of the proposed systems.

- b. Complete description of equipment and materials to be used and the procedures to be followed in installation, operation, maintenance and removal in relation to the proposed sequence of work.
- 4. Plan and details showing the method of sealing joints between the proposed cofferdam structures and existing features and proposed structures. Sealing could include the use of the following, if proposed by the contractor:
  - a. bulkheads with lean mix temporary concrete
  - b. sandbags
  - c. porta-dam or similar product
  - d. water proof material
  - e. temporary sunken structures
  - f. attachments of angles, channels, sheets, sealers, grout, cinders, wood, timber, cribbing, plugs, etc.
  - g. other sealing techniques
- 5. Plan and details of trenches, sumps, pits, collection pipes, filters, pumps, pump flow rate capacities, hoses, collection points, sedimentation tank, baffles, discharge points, and other pertinent information.

## **MATERIALS**

### **2.01 GENERAL**

- A. Equipment, machinery and materials for the performance of the work of this Section may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements.
- B. The Contractor shall maintain and employ adequate backup equipment in the case of equipment breakdown.

## **EXECUTION**

### **3.01 CONTROL OF SURFACE WATER, RUNOFF, GROUNDWATER, STORMWATER AND STREAM FLOW**

- A. The Contractor shall design, operate maintain and construct temporary controls of surface water, runoff, groundwater, stormwater and streamflow. All work under this Contract shall be performed in the dry.
  - 1. Maintain flow of watercourses through the work. Passage of storm flows is considered incidental to this item.
  - 2. Control of surface water, runoff, groundwater, stormwater and streamflow shall be performed in accordance with all federal, state and local codes, ordinances and regulations.

- B. The Contractor shall furnish, install and operate all necessary pumps, piping and other facilities and equipment needed to control surface water, runoff, groundwater, stormwater and streamflow while construction is in progress.

All sumps shall be surrounded by suitable filter fabric, stone or other acceptable materials to prevent the migration or pumping of fine grained materials and subgrade disturbance.

Maintain site grades to direct surface runoff to collection points. Prevent surface water from running or collecting over prepared subgrades or fill surfaces. Do not permit standing water to accumulate in excavations.

Modify procedures which cause or may cause, in the opinion of the Engineer, damage to new or existing facilities. Modification to system shall be made at no additional cost to the Owner.

### 3.02 REMOVAL OF FACILITIES

- A. The Contractor shall completely remove all temporary water control equipment and materials when no longer required, as approved by the Engineer.

## MEASUREMENT AND PAYMENT

### 4.01 GENERAL

- A. Measurement: Work under this Section will not be measured, but will be paid for under the Contract Lump Sum Price for Control of Water. Control of water shall include furnishing all material, mobilization, labor, including divers, equipment, tools, power and incidentals necessary to complete the work shown on the Drawings. Passage of storm flows is considered incidental to this item. No separate measurement or payment will be made for modifications, removal, or other associated items.
- B. Payment: Control of water and Pond level for the temporary construction condition will be paid for at the contract lump sum price for Control of Water.
- C. Pay Items:

02140.1	Control of Water	Lump Sum
---------	------------------	----------

**END OF SECTION**

## **02220 CONCRETE DEMOLITION**

### **GENERAL**

- 1.01 DESCRIPTION OF WORK. Work under this Section shall include but limited to furnishing all labor, materials and equipment required for the partial demolition and removal from the site of part of the structures as show on the plans.
- A. Concrete demolition. To facilitate repairs to the spillway, training walls/penstock area, splashpad and other area shown on the drawings, the contractor shall remove deteriorated concrete, concrete with cracks and spalling concrete to reach sound, intact, competent concrete. The contractor shall remove concrete using hoe-ramming, jack hammering, drilling and splitting, hand labor and/or other methods to remove the deteriorated concrete. Saw cutting may be required to remove portions of the deteriorated concrete to expose sound, intact, competent concrete.
- B. Crack demolition. To facilitate repairs to the splashpad and other areas with cracks in the concrete, the contractor shall remove cracked concrete by hoe-ramming, jack hammering, drilling and splitting, hand labor, saw cutting and other methods. Concrete demolished along cracks shall be removed to expose sound, intact, competent concrete minimum 6 inches in width.
- C. ALL LOOSE DEBRIS WHICH IS DISLODGED DURING THE PROCESS SHALL BE COLLECTED AND REMOVED BY THE CONTRACTOR ON A DAILY BASIS.

### **PRODUCTS**

#### **2.01 GENERAL**

- A. Equipment, machinery and apparatus used to perform the work of this section may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements without causing any damage to the adjacent remaining structure.

### **EXECUTION**

#### **3.01 GENERAL**

- A. Care shall be taken during the removal of all structures to prevent damage to any part of the structure to remain.
- B. All materials resulting from structure shall become the property of the Contractor.
- C. Dispose of remaining debris from structure removal off site in accordance with all applicable laws, rules and regulations.

### **MEASUREMENT AND PAYMENT**

4.01 MEASUREMENT: Measurement of concrete demolition will be measured per cubic foot of material removed from the structure and will be measured as the difference between the preconstruction concrete geometry and the post demolition concrete geometry. Measurement per cu. ft will be measures to the nearest 0.1 cu. ft.

4.02 Payment of concrete demolition will be paid per cubic foot.

4.03 PAY ITEMS

02220.1 Concrete Demolition per cubic foot

END OF SECTION

## **03100 CONCRETE FORM WORK**

### **GENERAL**

#### **1.01 DESCRIPTION**

- A. This Section specifies designing, furnishing, constructing, and removing formwork, including falsework and centering, for cast-in-place concrete structures and members.

#### **1.02 QUALITY CONTROL**

##### **A. Design Criteria**

1. Design and construct formwork in accordance with the details indicated and the applicable requirements of ACI 347, except as modified herein.
2. Formwork
  - a. Design formwork as required to meet finishing and tolerance requirements for concrete surfaces specified in Section 03300.
  - b. Design forms to have sufficient strength to carry the dead weight of the concrete as a liquid and to produce concrete meeting the specified tolerances.
3. Falsework
  - a. Design falsework to support loads to be encountered and to withstand forces to which it will be subjected during the construction period.
  - b. Design falsework to carry vertical and lateral loads to ground either independently or in combination with portions of structures which have attained adequate strength.

#### **1.03 SUBMITTALS**

- A. Manufacturers' Literature. Submit manufacturer's literature describing products.
- B. Working Drawings
  1. Show details of form systems; methods of form construction and erection; falsework; location and details of shoring and re-shoring; design computations; and locations of form joints, form ties, and construction joints.
  2. Show details of form systems affecting appearance of concrete surfaces, such as joints, tie holes, liners, patterns, and textures. Show such items in relation to entire form system.

- C. Description and Time Schedule. Provide description of forming system, centering, shoring, and re-shoring in relation to scheduled date and rate of placing concrete.

## **PRODUCTS**

### **2.01 MATERIALS**

#### **A. Formwork**

1. Plywood: Exterior type; one surface suitable for specified finish; sealed to prevent absorption of water from the concrete.
2. Hardboard: Tempered, smooth-one-side, conforming to U. S. Commercial Standard CS 251.
3. Steel Forms and Fiberglass-Reinforced Plastic Forms: As required to form concrete surfaces to the specified tolerances and finishes, free of irregularities and concrete stain.
5. Form Ties: Accepted form clamps and factory-fabricated, snap-off metal type ties of adequate design to minimize form deflection and preclude concrete spalling upon removal; fabricated so that set-back in the concrete is such that the portion of the tie remaining after snap-off and removal of the exterior portions is at least two inches back from the concrete surface. Maximum diameter of spreader cones on tie wires: 7/8 inch.
6. Bond Breaker: Non-staining, free of mineral oils or other non-drying ingredients, and leaving no bond-inhibiting residues on concrete; compatible with paint systems, water-repellant coatings, or other indicated surface treatments.
7. Chamfer Strips: Triangular fillets milled from clear, straight-grain wood, surfaced each side; or extruded vinyl type.

## **EXECUTION**

### **3.01 CONSTRUCTION**

#### **A. General**

1. Do not use earth cuts as forms for vertical surfaces except at locations shown on the drawings and for lean concrete mudmat working surfaces.
2. Construct forms consistent with the required finish, mortar tight, of the required strength, and to result in concrete surfaces conforming to the tolerances specified.
3. Arrange forms to allow proper erection sequence and to permit form



removal without damage to concrete.

4. Construct forms for outside surfaces with stiff wales at right angles to the studs, and form clamps extending through and fastened to the wales. Anchor and brace forms to produce safety and proper alignment.
5. Except where otherwise indicated, make form tie spacing and formwork pattern regular and symmetrical, with joints plumb and level.
6. Chamfer external corners of exposed concrete minimum 1 inch unless otherwise indicated, by placing moldings in forms.

B. Falsework

1. Adequately brace and maintain falsework to safely support vertical, lateral and asymmetrical loads until completed structure has attained design strength.
2. Distribute falsework loads over area where shoring is erected and protect against movement.

3.02 REMOVAL

- A. The schedule for removal of forms, shoring, and re-shoring, shall be as specified in Construction Specifications.

**MEASUREMENT AND PAYMENT**

- 4.01 GENERAL: No separate measurement nor payment will be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which they pertain.

END OF SECTION

## **03310 PORTLAND CEMENT CONCRETE**

### **GENERAL**

#### **1.01 DESCRIPTION**

- A. This Section specifies portland cement concrete, including materials, batching, mixing, delivering, testing, and inspection.
- B. Classes of Concrete
  - 1. All concrete shall be 4,000 psi 3/4" aggregates. The minimum 28-day compressive strength, shall be 4,000 pounds per square inch as determined by ASTM C39, and the maximum permissible size of coarse aggregate shall be 3/4 inches.

#### **1.02 QUALITY CONTROL**

- A. Testing and Inspection Services
  - 1. Sampling and testing of concrete; acceptance of concrete mix proportions; and field inspection will be by the Contractor.
  - 2. The use of testing and inspection services shall in no way relieve the Contractor of his responsibility to furnish materials and construction in compliance with the Contract Documents.
  - 4. Failure to detect any defective work or material shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the Engineer for final acceptance.
  - 5. The Contractor shall obtain testing services from an independent testing laboratory agency. Copies of test data shall be submitted to the Engineer for review and approval.
  - 6. Minimum of six (6) test specimens shall be obtained per separate concrete placement.
- B. Determination of Concrete Proportions
  - 1. Submit to the Engineer, not less than 5 days in advance of the schedule for concrete placement, three copies each of the proposed mix design to be used for each class of concrete in the work, indicating the type, source and quantity of all concreting materials.
  - 2. Do not place any concrete in the work until the mix design has been accepted as specified herein.
- C. Methods of Sampling and Testing
  - 1. Composite Samples: ASTM C 172.
  - 2. Specimen Preparation: ASTM C31.
  - 3. Compressive Strength: ASTM C39. The temperature of the concrete sample will be determined for each strength test.
  - 4. Air Content: ASTM C173 or C231 as applicable.
  - 5. Slump: ASTM C143
  - 6. Unit Weight: ASTM C 138 or C567 as applicable.

#### **1.03 SUBMITTAL**

- A. Design Mixes. Submit mix designs as specified in Article 1.02.
- B. Certificates
  - 1. Submit mill test results or manufacturer's certificates attesting to conformance of cement with specifications.
  - 2. Submit certificates stating that each admixture used is identical in composition to the sample used for acceptance testing and is compatible with all other materials in the design mix.
- C. Batch Tickets. Submit a delivery ticket with each batch delivered to the site, as specified in ASTM C94.
- D. Independent Testing Agency. Submit qualifications of the Contractor's Independent Testing Agency to test the concrete.

## PRODUCTS

### 2.01 MATERIALS

- A. Portland Cement: ASTM C150, type as follows:
  - 1. Type II: shall be used at all concrete locations
  - 2. Use only one approved brand of cement throughout the work, unless otherwise accepted by the Engineer.
- B. Admixtures: Use admixtures as specified herein and as accepted by the Engineer.
  - 1. Air-Entraining Admixtures: ASTM C260, use in all concrete.
  - 2. Water-Reducing Admixtures: ASTM C494; use in all concrete.
  - 3. Other admixtures, as accepted by the Engineer, may be used to provide concrete with qualities acceptable to the Engineer. Accelerators shall not be used.
  - 4. Use only admixtures which are compatible with each other and which produce the desired concrete properties.
  - 5. The use of calcium chloride is prohibited.
- C. Water: Potable and exhibiting no deleterious effects upon the required concrete properties.
- D. Aggregates
  - 1. Coarse Aggregate: Well-graded crushed stone or crushed gravel conforming to ASTM C33. Maximum aggregate shall pass the 3/4 in. U.S. Standard Sieve
  - 2. Fine Aggregate: Washed natural sand conforming to ASTM C33.

### 2.02 MIXES

- A. General. Provide ready-mixed, air-entrained concrete composed of portland cement, aggregates, water, air-entraining and water-reducing admixtures, and other admixtures as accepted by the Engineer; secured from a single local plant; conforming to ASTM C94; capable of being placed without excessive segregation; and capable of developing the specified characteristics.
- B. Strength. Concrete shall be 4,000 psi 28-day compressive strength.
- C. Cement Content. Provide concrete with a maximum water/ cement ratio of 0.44.
- E. Air Content; All Concrete shall contain the following Air Entrainment; 5 to 7%
- F. Slump: three to six inches

PORTLAND CEMENT CONCRETE MIXES			
CLASSIFICATION		MINIMUM CEMENT CONTENT	AIR CONTENT
Strength (psi)	Maximum Aggregate	(Sacks per cu. yd.)	(percent)
4000	3/4 inch	6.5	5-7

## EXECUTION

### 3.01 GENERAL

- A. Batch, mix, and deliver portland cement concrete in accordance with ASTM C94. Batch all constituents, including admixtures, at the central batching plant. Add admixtures only under the surveillance of the inspector. Produce concrete in accordance with ACI 301, Chapter 7, and as specified herein.
- B. Contractor shall include all required steel placement, formwork, tools and incidentals to complete the work as shown on the drawings.

## PART 4 - MEASUREMENT AND PAYMENT

- 4.01 Portland Cement Concrete shall be measured per cubic yard in-placed and accepted.
- 4.02 Portland Cement Concrete shall be paid per cubic yard in-placed and accepted. Payment for concrete shall include concrete testing.
- 4.03 PAY ITEMS
  - 03310.1 Portland Cement Concrete per cubic yard

END OF SECTION

## **02221 SITE CLEARING**

- 1.01 DESCRIPTION OF WORK. Work under this Section shall include but not limited to furnishing all labor, materials and equipment required for site/ vegetation clearing, tree pruning and removal from the site of vegetation and other items shown on the plans.
- A. Vegetation Clearing. Remove vegetation at locations shown on the drawings to facilitate the work.
  - B. Tree Clearing. Contractor shall remove trees as shown on the drawings.
  - C. Seeding. Areas shown on the drawings shall be seeded with grass seed, standard MassDOT grass mix, after vegetation and brush cutting and removal. All vegetation shown on the drawings shall be cut to 12 in. height or less.
  - D. During the work, the Contractor will be required to protect areas with snow fence barriers, cones, caution tape, haybales, silt fence and other visual and physical barriers.

## **PRODUCTS**

### **2.01 GENERAL**

- A. Equipment, machinery and apparatus used to perform the work of this section may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements without causing any damage to adjacent items, structures, and areas.

## **EXECUTION**

### **3.01 GENERAL**

- A. Care shall be taken during the removal of all items to prevent damage to any part of the site.
- B. All materials resulting from structure shall become the property of the Contractor.
- C. Dispose of remaining debris from structure removal off site in accordance with all applicable laws, rules and regulations.

## **MEASUREMENT AND PAYMENT**

- 4.04 MEASUREMENT: Measurement of Site Clearing will not be measured. Site clearing shall include seeding.
- 4.05 Payment of Site Clearing will be paid on a lump sum basis.
- 4.06 PAY ITEMS

02221.1 Site Clearing Lump Sum

END OF SECTION

## 04900 STONE WALL JOINT REPAIR

### GENERAL

#### 1.01 DESCRIPTION

- A. The work shall generally consist of sealing and repointing mortared joints on the training walls as shown on the Drawings. It shall include:
1. Providing and removing all necessary cofferdam structures and pumps, etc. to control water to enable the work to be completed.
  2. Providing and removing all necessary staging equipment to adequately provide access to joints required for repair.
  3. Repointing and sealing all joints on training walls including removal of existing mortar and vegetation from joints and restoration of joints with new mortar.
  4. Repointing to include the removal of existing mortar and vegetation from all joints, cleaning the joints to remove loose soil, gravel and mortar and installing weep holes on the face of the training walls.
  5. Cleaning of the joints shall be completed using hand labor and hand tools to ensure the walls remain stable at all times. The Contractor shall not remove excess material which could cause above blocks to become unstable or displaced from the existing location.
  6. Install stainless steel weep pipes into the joints by hand methods or drilling and grouting on an approximate grid pattern of 3 ft x 3 ft. The location of each individual weep pipe will be modified in the field to accommodate actual joint locations. Review all proposed weep pipes locations with the engineer and gain acceptance prior to installation.
  7. All joints shall be treated whether deteriorated or currently filled with mortar.

#### 1.02 QUALITY ASSURANCE

- A. Source Quality Control:
1. Use products of companies having established reputations in the manufacture of the particular materials, equipment, or apparatus specified. Such products may be of their own make, or products of others for which they assume full responsibility when used in said outfits (which are not manufactured completely by them), and with replacement parts available.
  2. Do not change source of brands of mortar materials during the course of work.
- B. Contractor Qualifications: The Contractor performing the work shall be experienced in the restoration of stone block structures. The Contractor shall provide evidence of 3 years work experience in such work.

1.03 PRODUCT DELIVERY, STORAGE AND HANDING

- A. Prevent deterioration or damage to materials due to moisture, high or low temperatures, contaminants, or other causes. Store and handle materials in compliance with manufacturer's recommendations.
- B. Store materials in undamaged condition with seals and labels intact as packaged by the manufacturer.

1.04 SITE CONDITIONS

- A. Masonry restoration shall not be performed when weather conditions detrimentally affect the quality of the finished product. No mortar shall be placed when the air temperature is below 40°F in the shade. When area temperature is likely to exceed 90°F, mortar shall have a temperature not exceeding 90°F or as recommended by the manufacturer. Maintain materials and surrounding air temperature between 40°F and 90°F, or as recommended by the manufacturer, prior to, during, and 48 hours after completion of work.
- B. Materials to be used in the work shall be neither produced nor placed during periods of rain or other precipitation. Material placements shall be stopped, and all in-place material shall be protected from exposure, during periods of rain or other precipitation.

1.05 SUBMITTALS

- A. Restoration Methods: Submit a descriptive narrative of proposed restoration methods. Description shall be organized in sequence from preparation through completion of work. Schedule showing estimated time, in calendar days, for completion of each phase of the work shall be included.
- B. Qualifications: Submit documentation showing Contractor's experience
- C. Design Mix: Submit design mix indicating material proportions, water-cement ratio, and required environmental conditions for each mortar. Use materials in such proposed design mix as specified herein. Make such adjustments in the proposed design mix as directed by the Engineer. Make such adjustments at no increase in Contract Price.
- D. Submit mortar manufacturer installation instructions.
- E. Reports: Submit reports on grout indicating conformance to property requirement of ASTM C 270 and component mortar materials to requirements of ASTM C 270.

1.06 WARRANTY

- A. Restoration procedures shall be warranted for a period of two years against damage to masonry from improper mortar clean-up, loss of bond between masonry and mortar, fracturing of masonry edges from improper mortar joint preparation procedures or improper mortar formulation, and occurrence of efflorescence.

**PRODUCTS**



## 2.01 MATERIALS

- A. Type I Mortar: Type I Mortar shall be installed in all masonry joints scheduled for restoration.
  - 1. Type I Mortar shall be comprised of the following:
    - a. Portland Cement: ASTM C150, Type I.
    - b. Mortar Aggregate: ASTM C144, standard masonry type.
    - c. Hydrated Lime: ASTM C207, Type S.
    - d. Water: Clean, non-alkaline, and potable.
  - 2. Mortar Mix: ASTM C270, Type S with N Type pointing mortar, using the Property Specification of ASTM C270.
  - 3. Mortar Color and General Characteristics: Type I Mortar shall match the original existing mortar as closely as possible in composition, color, texture, strength, size, finishing and porosity.
- B. Type II Mortar: Type II Mortar shall act as a sealant and only be installed as directed by the engineer on upstream stone faces.
  - 1. Acceptable Manufacturer: SikaTop 123 Plus, as manufactured by Sika Corporation, Lyndhurst, New Jersey or equal.
  - 2. Mortar Color: Type II Mortar shall match the original existing mortar color as closely as possible.
- C. Weep Holes: Weep holes shall consist of 3/8-inch outside diameter stainless steel tubing and be embedded into the face of the stone joints and extend out beyond the face of the stone joints. Tubing shall be smooth internally and free from burrs, dents or constrictions.

## 2.02 PRODUCTS

- A. Drilling Equipment: Equipment used to drill holes in masonry shall be standard handheld masonry drills, commonly used for drilling holes in concrete and masonry.
- B. Compressed Air Supplies: Compressed air equipment shall deliver clean, oil and moisture free compressed air at the surface to be cleaned.
- C. Mixing, Transporting, and Placing Job Materials: Equipment used for mixing, transporting, and placing mortar shall be capable of satisfactorily mixing materials and supporting placement operations in an uninterrupted manner. Defects and deficiencies in operation or capacity shall be resolved prior to use in the work. Equipment used for mixing, conveying, and placing of materials shall be clean, free of old materials and contaminants, and shall conform to the material manufacturer's recommendations.

## EXECUTION

### 3.01 EXAMINATION

- A. Masonry restoration shall be undertaken only after complete evaluation and analysis of the areas to be repaired.
  - 1. Examine joints indicated for repointing for compliance with requirements for joint configuration, installation, tolerances and other conditions affecting performance of the restoration.
  - 2. Do not proceed with restoration until satisfactory conditions have been corrected.

### 3.02 PREPARATION OF JOINTS

- A. Cut joints scheduled for repair to a uniform depth of 4-inches. Cut joints in a manner which will not damage the surrounding masonry and will provide a uniform surface for repointing. Remove vegetation, soil and gravel from each joint to be repointed. Remove loose and deteriorated stones smaller than 4 inches, unless removal would cause instability in the wall. Do not remove any stones, of any size, which support above or adjacent stones. Do not remove any stones which would cause the wall to become unstable.
- B. Clean joints scheduled for repair immediately before installation of Type I Mortar to comply with the following requirements:
  - 1. Remove all loose particles, laitance, spalling, cracked or debonded mortar, and foreign materials from joint. Surfaces prepared for repair shall be cleaned free of dust, dirt, masonry chips, vegetation, oil or other contaminants and rinsed with water before repair work is begun.
  - 2. Clean masonry by brushing, grinding, mechanical abrading, rising with water to remove loose or objectionable material, or a combination of these methods to produce a clean, sound surface capable of developing optimum bond with mortar. Remove loose particles remaining after cleaning operations by vacuuming or blowing out joints with compressed air.

### 3.03 WEEP PIPES

- A. Weep pipes shall be installed within masonry joints on an approximate grid pattern such that the overall average of weep pipes occurs on a 3 ft by 3 ft grid.

### 3.04 MORTAR MIXING

- A. Type I Mortar:
  - 1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use. Provide uniformity of mix and coloration.
  - 2. If water is lost by evaporation, re-temper only within two hours of mixing.
- B. Type II Mortar: Mix Type II Mortar in accordance with the manufacturer's instructions. Mix only that quantity which can be placed within its working time.

### 3.05 APPLICATION OF MORTAR

- A. Install Type I Mortar in accordance with ASTM C270.
- B. For joints requiring Type II Mortar, do not install sealant until the adjacent Type I Mortar has fully cured. Install sealant in accordance with the manufacturer's instructions.
- C. Place mortar into joints by troweling; powered injection system such as Quickpoint, West Concord, Massachusetts, (800) 368-2292; or other approved methods. For existing mortarless joints, the Contractor should install a backer rod or similar system to control the quantity of mortar placed in the joint.
- D. Excess mortar shall be immediately removed from exposed granite surfaces.

### 3.06 CLEANING

- A. No sooner than 72 hours after completion of the restoration, faces and other exposed surfaces of masonry shall be washed down and rinsed with clean water. Cleaning work shall be done when temperature and humidity conditions allow the surfaces to dry.
- B. Remove and dispose of all debris from restoration work.

## MEASUREMENT AND PAYMENT

### 4.01 GENERAL

- A. Measurement: Work under this Section will be measured per square foot (SF) of wall face repointed for Stone Masonry Joint Restoration regardless of actual density, sizing or spacing of joints to be repointed. Stone masonry joint restoration shall include furnishing all forces, materials and equipment necessary to complete the work shown on the Drawings and included herein. No separate measurement or payment will be made for modifications, staging, access, control of water or other associated items.
- B. Payment: Payment for work under this section will be made at the Unit Price for Stone Masonry Joint Restoration.
- C. Pay Item:      4900.1 Stone Masonry Joint Restoration      Per Square Foot of Wall Face

END OF SECTION

## SECTION 15300 WATER CONTROL GATES

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

The work for supply and installation of a Sluice Gate shall consist of the following:

1. Installing new stainless steel sluice gate, with top seal and hand driven pedestal actuator fastened to the concrete wall in the existing penstock. Actuator controls shall be secured in accordance with the manufacture's recommendations. The sluice gate embedded frames shall be installed within new constructed concrete in accordance with manufacture's recommendations and the Contract Documents.
1. Sluice gate shall be commissioned in place at the site by the supplier's technician(s). Documentation of the in place commissioning shall be forwarded to the Engineer and filed with the project documents.
- 2.

#### 1.02 REFERENCES

A. Material and installation shall be in accordance with the American Water Works Association (AWWA).

#### 1.03 SUBMITTALS

A. The manufacturer shall submit the following items to the Owner for approval:

1. Drawings showing the principal dimensions, details and materials to locate and install all parts and connections of the sluice gate, stems, lift mechanism, actuators, controls, frame and accessories. Gate shall be manufactured and furnished in accordance with the Contract Documents after they have been reviewed by the Engineer.
2. Illustrated catalog data and parts schedule in sufficient detail to serve as a guide in assembly and disassembly of the gate and in ordering repair parts.

#### 1.04 DESIGN CRITERIA

Sluice Gate

A. Disc: Sluice gate disc to be installed shall consist of a flat plate reinforced with structural or formed members welded to the plate. The disc is to be designed to limit deflection of the gate to 1/360 of its span. The working design stresses shall not exceed the lesser of 40% of the yield strength or 25% of the ultimate strength of the material.

B. Frame: The gate frame shall consist of guides and invert member, welded or bolted together to form a rigid one-piece frame. The guide slot shall engage the disc plate a minimum of 1". The invert member shall be a formed shape welded to the bottom of the guide to meet with the disc seal. The working stresses shall not exceed the lesser of 40% of the yield strength or 25% of the ultimate strength of the material, and shall be arranged to permit removing the disc from the frame.

C. Seals: Seals of the "J" type shall be attached to the frame to restrict leakage to the following limits:

1. Under a design seating head of 10 feet, leakage shall not exceed 0.1 GPM per foot of seating perimeter.
2. Under a design unseating head of 10 feet, leakage shall not exceed 0.2 GPM per foot of seating perimeter.

Stems: riser stems shall be of type 304 stainless steel or approved equal. The L/r ratio of the unsupported stem length, shall not exceed 200. Stem guides shall be installed where required to limit the unsupported stem length and shall be bronze bushed.

Stem Covers: all rising stems shall be provided with clear, see through stem covers of a durable and acceptable material and be vented and closed at the top.

Actuators: actuators shall be handwheel type having a minimum diameter of 15 inches and maximum diameter of 24 inches.

Pedestals: pedestals shall be securely attached to the new concrete spillway wall on wall brackets and concentric. Pedestals shall be stainless steel.

Embedded Frame: embedded frame shall be of type 304 stainless steel or approved equal and form a continuous unit around the perimeter of the concrete opening at each gate location.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE SLUICE GATE MANUFACTURERS AND ACTUATOR SUPPLIERS

- A. Whipps, Inc., Athol, Massachusetts
- B. Rodney Hunt Company, Orange, Massachusetts

### 2.02 MATERIALS

- A. Disc Skin Plate A276, Type 304 Stainless Steel
- B. Frame and Guides A276, Type 304 Stainless Steel
- C. Seals J Side Seal - Rubber D2000 Grade AA625
- D. Retainer Bars and Fasteners for Seals A276, Type 304 Stainless Steel
- E. Stem A276, Type 304 Stainless Steel
- F. Stem Couplings A276, Type 304 Stainless Steel
- G. Stem Guides A276, Type 304 Stainless Steel
- H. Concrete 4000 min. psi concrete, 28 day break strength

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Work done under this Section shall be subject to inspection and approval by the Engineer. The Engineer shall have access to places of manufacture where materials are being produced or fabricated, or where tests are being conducted and shall be accorded facilities for inspection and observation.

### 3.02 INSTALLATION

- A. Installation of all parts shall be done by the Contractor in a workmanlike manner and in accordance with detailed technical installation procedures supplied by the gate manufacturer. It shall be the contractor's responsibility to handle, store, and install the gate operating mechanism and accessories in strict accordance with the manufacturer's drawings and recommendations.
- B. The sluice gates, assembly and actuator shall be commissioned in place at the site by the supplier's technician(s).

### 3.03 FIELD LEAKAGE TEST

- A. A field leakage test shall be performed by the Contractor on the sluice gate after installation. The manufacturer shall be notified of the test in sufficient time for appropriate representation during the test, if desired by the manufacture. After all adjustments have been made and the mechanism properly lubricated, each slide gate shall be run through one complete cycle as a final check on proper operation before

starting the leakage test. Seating and unseating head shall be measured from the top surface of the water to the center of the gate.

The Engineer may waive the field leak test, at his discretion.

Under the design seating head, the leakage shall not exceed 0.2 GPM per foot of seating perimeter.

#### **PART 4 - MEASUREMENT AND PAYMENT**

4.01 Measurement: Supply and installation of Sluice Gates shall include provision of gates, guides, actuator, controls, and all related equipment and fittings, concrete and grout needed to properly install the gate. No separate measurement or payment will be made for modifications, leakage test, or other associated items. Sluice Gate work will not be measured for payment.

4.02 Payment: Payment for gates will be paid for under the Contract Unit Price for each Sluice Gate.

4.03 Pay Item:

15300.1 Sluice Gate Each

#### **END OF SECTION**