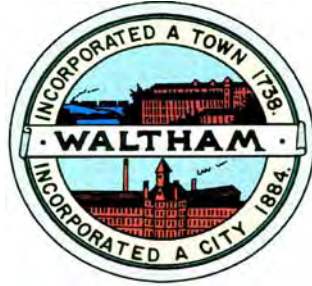


# The City of Waltham



**Invites  
Interested Parties  
To propose the best offer and or bid  
For the service or product herewith described:**

**FLOOD MITIGATION PROJECT,  
CHESTER BROOK AT THE KENNEDY MIDDLE SCHOOL**

**The bid opening will be held: **Friday June 7, 2013 at 10:00 AM****

*Phone: 781-314-3244, Fax: 781-314-3245*

# **Table of Contents:**

- **Invitation to Bid**
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# **Invitation to Bid**

# The City of Waltham Purchasing Department

## REQUEST FOR BID (RFB)

Under the rules of M.G.L. Chapter 30, §39M, the Chief Procurement Officer of the City of Waltham Purchasing Department hereby requests sealed bids for:

### Flood Mitigation, Chester Brook at Kennedy School

Price Proposals will be received at the office of the Purchasing Agent, City Hall, 610 Main Street, Waltham MA 02452, until,

**Friday, June 7, 2013 at 10:00 AM**

At which time and place the bids will be publicly opened and read.

Specifications and information available on line by visiting the Waltham Purchasing Department web site at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids)

**BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:**

**BID FOR: Flood Mitigation, Chester Brook**

A 5% Bid Bond or Certified Check must accompany each bid submitted and made payable to, and become the property of the City of Waltham, if the successful bidder refuses or neglects to comply with the terms of the Contract.

If the Bidder is a corporation, state your correct corporate name and State of incorporation. If Bidder is a partnership, state names and addresses of partners. If Bidder is a trust or other legal entity, state correct names and addresses of trustees or names and address of those legally authorized to bid and enter into contracts.

Notice is hereby given that the work done under this contract is to be paid for with Federal funds under the Housing and Development Act of 1974 as amended and that all Federal laws and regulations relative to equal employment opportunity and training employment, and contracting opportunities for business and lower income persons are applicable to the contractor and any subcontractors.

The successful bidder will be required to furnish a payment bond equal to 50% of the bid amount from an approved surety company.

**EXCEPTION OR ALTERNATES TO SPECIFICATIONS, TERMS OF SALE, AND DISCOUNTS AVAILABLE, MUST BE INCLUDED IN THE BID PRIOR TO OPENING DATE.**

# **Intent of Project**

**The goal of this flood mitigation project is to provide flood detention in the wetland area surrounding the Chester Brook at the Kennedy Middle School. Provision of this additional storage will alleviate downstream flooding by detaining volume from larger storm events and releasing it over time through the updated outlet control structure.**

AGREEMENT

CITY OF WALTHAM

ARTICLE 1. This agreement, made this \_\_\_\_\_ day of \_\_\_\_\_, 2013 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

\_\_\_\_\_

\_\_\_\_\_ hereinafter called the CONTRACTOR.

ARTICLE 2. Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the CITY OF WALTHAM for itself, and said contractor for his heirs, executors, administrators and assigns as follows:

To furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in strict conformity with the provisions of this Contract and of the Notice to Bidders, bid, Project Manual, and Drawings hereto annexed. The said Notice to Bidders, bid, Project Manual, and Drawings are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

ARTICLE 3. In consideration of the foregoing premises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required by not included in the items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

This Agreement entered into as of the day and year first written above.

**CITY OF WALTHAM, MASSACHUSETTS**

**FOR THE CITY**

\_\_\_\_\_  
**Jeannette A. McCarthy, MAYOR,**  
**City of Waltham**  
**Date:** \_\_\_\_\_

\_\_\_\_\_  
**John B. Cervone, City Solicitor**  
**Date:** \_\_\_\_\_  
**APPROVED AS TO FORM ONLY**

\_\_\_\_\_  
**Stephen Casazza, Chief Engineer**  
**Date:** \_\_\_\_\_

\_\_\_\_\_  
**Joseph Pedulla, Purchasing Agent**  
**Date:** \_\_\_\_\_

\_\_\_\_\_  
**Paul Centofanti, Auditor**  
**Date:** \_\_\_\_\_

**I CERTIFY THAT SUFFICIENT FUNDS  
ARE AVAILABLE FOR THIS CONTRACT**

**FOR THE COMPANY**

\_\_\_\_\_  
**CONTRACTOR (Signature),**  
**Date:** \_\_\_\_\_

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Address**

# Instructions



## INSTRUCTIONS FOR BIDDERS

1. **READ ALL DOCUMENTS.**

Bidders should familiarize themselves with all the documents contained herein; it is mandatory that all Bids be in compliance with all the provisions contained in said documents.

2. **FORMS AND ATTACHMENTS.**

Bids are to be completed on the forms provided ONLY and enclosed in a sealed envelope marked on the outside "BID (title)" and the name and address of bidder. Attachments submitted in addition to the Waltham Purchasing Department produced forms may not be considered.

3. **PRINTED OR TYPED RESPONSE.**

All information must be typewritten or printed in ink, including the price the bidder offers in the space as provided on the bid form.

4. **CORRECTIONS.**

Bids that are submitted containing cross outs, white outs or erasures, will be rejected. All corrections or modifications to the original bid are to be submitted in a separate envelope, properly marked on the outside, "CORRECTION/ MODIFICATION TO BID (title)" and submitted prior to the bid opening.

**ALL DOCUMENTS SUBMITTED WITH YOUR RESPONSE WILL BE INCORPORATED INTO THE CONTRACT.**

5. **PRICE IS ALL INCLUSIVE.**

Bid prices shall encompass everything necessary for furnishing all items, materials, supplies or services as specified, and in accordance with the specifications, including proper packing, cost of delivery, and in the case of services, completion of same, as per specifications.

6. **PRICE DISCREPANCY.**

In the event of a discrepancy between the Unit Price and the Extension, the Unit Price shall prevail.

**7. EXPLANATIONS, EXCEPTIONS**

Explanations, exceptions or other information pertinent to the specifications may be made in writing and included in the same envelope with the bid.

**8. BID DEPOSITS.**

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (10) days of the receipt of said contract, such security shall be retained by the city as liquidated damages.

Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

**9. WITHDRAW.**

A Bid may be withdrawn by written request prior to the schedule for the Bid Opening. No withdrawals are permitted after the bid opening date and time. Withdrawals after the bid opening date will cause the forfeit of the bid Deposit.

**10. AWARD.**

Bids will be awarded not later than (90) ninety days after the scheduled bid opening date, unless otherwise stated, in the specifications. Unless otherwise specified, bids will be evaluated on the basis of, completeness of your RFP response, responsiveness, responsibility, best price and experience.

**11. AWARD CRITERIA.**

Qualified and responsive proposals will be evaluated based on Price, Technical, and Compliance requirements:

**12. DISCOUNTS.**

Discounts for prompt payments will be considered when making awards.

**13. TAX EXEMPT.**

Purchases by the City of Waltham is exempt from any Federal, State or Massachusetts Municipal Sales and/or Excise Taxes.

**14. SAMPLES.**

The City of Waltham may require the submission of samples either before or after the awarding of a contract. Samples are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples are

required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection of Bid. All samples must be called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

**15. ACTIVE VENDOR LIST.**

Vendors who wish to remain on the Active Bid List must either submit a Bid, No Bid, or a letter requesting same, no later than the Official Bid Opening. This is applicable to those vendors who have received the Invitation to Bid.

**16. FUNDS APPROPRIATION.**

**THE CONTRACT OBLIGATION ON BEHALF OF THE CITY IS SUBJECT TO PRIOR APPROPRIATION OF MONIES FROM THE GOVERNMENTAL BODY AND AUTHORIZATION BY THE MAYOR.**

**17. THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, OR ANY PART OF ANY BID, WHICH IN THE OPINION OF THE AWARDING AUTHORITY, IS IN THE BEST INTERESTS OF THE CITY OF WALTHAM.**

**18. THE TAX ATTESTATION CLAUSE, CERTIFICATION OF NON-COLLUSION AND THE CERTIFICATE OF VOTE AUTHORIZATION, are required by statute and are an integral part of the Invitation for Bid and must be completed and signed by the person submitting the Bid, or by the person/persons who are officially authorized to do so. Failure to do so may disqualify the bid.**

**19. STANDARD OF QUALITY.**

Where, in the specifications, one certain kind, type, catalog number, brand or manufacturer of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal and the Bidder may select one or the other. If the Bidder proposes to offer a substitute as an equal, he shall so indicate on the Bid Form, the kind, type, catalog number, brand, or manufacturer of material that is offered as an equal, and describe where it differs from the specifications. Substituted items must be capable of performing all the

functions and/or operational features described or indicated in the specifications. Failure to indicate the description of any substitute item on the Bid will be interpreted to mean that the Bidder will furnish the item or service as specified.

**20. MODIFICATION.**

No agreement, understanding, alteration or variation of the agreement, terms or provisions herein contained shall bind the parties, hereto unless made and executed in writing by the parties hereto.

**21. ASSIGNMENT.**

The final payment for work done under this Contract shall be made only after the Contractor has signed a statement under the penalty of perjury, certifying that he has completed the work described in the final estimate. Neither party hereto shall assign this Contract or sublet it in part or as a whole without the prior written consent of the other party hereto. The Contractor shall not assign any sum or sums due or becoming due to him hereunder without the prior written consent of the City.

**22. DELIVERIES:**

a) The Contractor shall pay all freight and delivery charges. The Waltham Purchasing Department does not pay for shipping and packaging expenses. Items must be delivered as stipulated in the specifications. All deliveries must be made to the inside of city buildings. Sidewalk deliveries will not be accepted. City personnel are not required to assist in the deliveries and contractors are cautioned to notify their shippers that adequate assistance must be provided at the point of delivery, when necessary.

b) All items of furniture must be delivered inside the building, set up, in place and ready for use. Deliveries are to be made between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except on holidays.

c) All damaged items, or items which do not comply with specifications will not be accepted and title therefore will not vest to the Waltham Purchasing Department until such items are accepted and signed for, in good order, by the receiving department.

d) The contractor must replace, without further cost to the Waltham Purchasing Department, such damaged or non-complying items before payment will be made.

**23. LABELING.**

All packages cartons or other containers must be clearly marked with (a) building and room destination; (b) description of contents of item number from specifications; (c) quantity; (d) City of Waltham Purchase Order Number and (e) Vendor's name and order number.

**24. GUARANTEES.**

Unless otherwise stipulated in the specifications, furniture, equipment and similar durable items shall be guaranteed by the contractor for a period of not less than one year from the date of delivery and acceptance by the receiving department. In addition, the manufacturer's guarantee shall be furnished. Any items provided under this contract which are or become defective during the guarantee period shall be replaced the contractor free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

**25. SINGLE VENDOR.**

The Waltham Purchasing Department desires to award a single contract based on the Grand Total Price. However, where applicable, the City reserves the right to make multiple awards on a unit price basis if, in the opinion of the Waltham Purchasing Department, it is in the best interest of the Waltham Purchasing Department.

**26. CHANGE ORDERS.**

Change orders are not effective until, if, as and when signed by the Mayor and no work is to commence until the change orders are fully executed.

**28. BID OPENING INCLEMENT WEATHER**

If, at the time of the originally scheduled bid opening, City Hall is closed to inclement weather or another unforeseeable event, the bid opening will be extended until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

**29. CITY ORDINANCES**

The successful bidder shall observe faithfully all statutory requirements and local ordinances.

**30. DELETION OF LINE ITEMS.**

The City of Waltham specifically reserves the right to delete from the Contract any of the items stipulated in the Bid should, in its opinion, such action be necessary. The City of Waltham further reserves the right, should funds be available, to add to the items stipulated in the Bid should, in its opinion, such actions be in the best interest of the City of Waltham.

# **GENERAL CONDITIONS**

## **GENERAL CONDITIONS**

**1. INFORMATION**

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words “or equal as approved” are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

**2. SUITS**

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against the City and its sub-contractors arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the City, its agents, employees or any subcontractor in performing the work, under this contract.

**3. LAWS AND REGULATIONS**

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the Commonwealth of Massachusetts, the United States of America and all agencies having jurisdiction over this contract.

**4. PROTECTION OF PROPERTY**

The Contractor shall take all proper precautions to protect the City’s property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

**5. PROTECTION OF PERSONS**

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through



bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

6. **CONTRACT DURATION.**

This contract is for the period required to complete the project

7. **INSURANCE**

A. **WORKMAN'S COMPENSATION:** The Contractor shall provide insurance for the payment of compensation and furnishing of other benefits under Chapter 152 of the General Laws of the Commonwealth of Massachusetts to all persons to be employed under this contract, the premiums for which shall be paid by the Contractor. Contractors shall provide insurance on a primary basis and the contractor's policy shall be exhausted before resorting to other policies. The contractor's policy is the primary one not the contributory.

B. **COMPREHENSIVE GENERAL LIABILITY**

Bodily Injury:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate
Property Damage:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate

C. **AUTOMOBILE (VEHICLE) LIABILITY**

Bodily Injury	\$2,000,000 Each Occurrence
Property Damage	\$1,000,000 Aggregate

D. **UMBRELLA POLICY**

General liability	\$2,000,000
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Your bid response must include a Certificate of Insurance with the above limits as a minimum. In addition, the Certificate of Insurance must have the following text contained in the bottom left box of the Certificate: *"The City of Waltham is a named additional insured for all insurances under the contract, excluding Automobile and Workers Compensation coverage"*.

The Certificate of Insurance must be mailed directly to:

Office of the Purchasing Agent  
Purchasing Department  
City of Waltham  
610 Main Street  
Waltham, MA 02452

**8. LABOR AND MATERIALS BOND**

The Contractor agrees to execute and deliver to the City, a Payment Bond equal to 50% of the contract value. This contract shall not be in force until said bond has been delivered and accepted by the City. Bond to be issued by a company licensed by the Commonwealth of Massachusetts.

**A LETTER FROM A SURETY COMPANY CERTIFYING THAT THE CONTRACTOR IS QUALIFIED AND CAPABLE OF OBTAINING THE ABOVE BONDS MUST BE INCLUDED WITH HIS/HERS BID.**

**9. PERSONNEL:**

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City Purchasing Agent shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior. The City Purchasing Agent may require the Contractor to submit a weekly performance record of the areas and of the work performed, on forms approved by the City Purchasing Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Purchasing Agent.

**10. PREVAILING WAGES**

The Contractor is required to pay the prevailing wages as determined under the provisions of Chapter 149, Sections 26 and 27D of the Massachusetts General Laws, including the submission of weekly payrolls to the awarding authority.

Copies of the Prevailing wage schedule will be found at

[www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids)

**11. MATERIALS**

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.

**12. TERMINATION OF CONTRACT**

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

**13. CONTRACT OBLIGATIONS**

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

**14. BIDDER EXPERIENCE EVALUATION**

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

**15. NOT-TO-EXCEED AMOUNT**

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the City's Purchasing Agent, City Auditor, Law Department and the Mayor prior to the commencement of the change order work. No work is to begin until the proper approvals have been obtained. A change order will be priced at the unit price. Failure to comply with this procedure will result in the cancellation of the contract and the non-payment of services provided.

**16. FINANCIAL STATEMENTS.**

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

**17 BREACH OF CONTRACT/ NON PERFORMANCE**

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.

**18 RIGHT TO AUDIT**

The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.

**19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.**

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

# **Specifications**

## SPECIFICATIONS

### PROJECT DESCRIPTION

1. The goal of this flood mitigation project is to provide flood detention in the wetland area surrounding the Chester Brook at the Kennedy Middle School. Provision of this additional storage will alleviate downstream flooding by detaining volume from larger storm events and releasing it over time through the updated outlet control structure.

### WORK TO BE DONE

1. The work of this Contract includes, but is not limited to:
  - a. Cleaning of entire length of stream channel from outlet headwall at south end to inlet at north end consisting of removing branches, stumps, foreign materials, debris, and obstruction to flow in cross section of flow channel.
  - b. Construct reinforced concrete headwall / outlet control structure that is tied into the existing headwall with structural steel.
  - c. Clean-out the three existing drain outlets shown on plans along Lexington St. and install three flared end outlets sections per detail on plans. Clearing and grubbing is required along Lexington St. to facilitate installation.
  - d. Chain link fence - 4' high, 4" off-ground and chain link gate - 4' x 12', 4" off-ground as shown on plan.
  - e. Two Precast concrete Catch Basins with a minimum of 4' sump and a two Granite curb inlet stones – Install (1) 12" PVC lateral to the south side of the Chester Brook and Install (2) 12" PVC lateral to the north side section of the Chester Brook, CB must have two double grated frames at each of the 2 locations.
  - f. Pavement to prevent the pooling of water at traffic island as shown on plan.
  - g. Install water tight frame and cover on two existing SMH's as shown on plan in front of Kennedy Middle School in detention area on sewer main.
  - h. Mill and re-surface roadway (Jack's Way) as shown to limits on plan.
  - i. Install roadway striping / road markings as shown in the detail section.
  - j. Traffic Control Plan per Waltham Police Department, including construction signs for work zone, safety barrels, cones, etc.
  - k. Road work / Project Completion on August 21, 2013, time is school year based start date.

### CONTRACT TIME

1. The time for Substantial Completion of the work is August 21, 2013, including final paving.
2. The Contractor shall submit shop drawings, data, and samples and place his/her order sufficiently early to permit consideration and approval by the City Engineer before materials are necessary for incorporation into the construction work. Any delay resulting from the Contractor's failure to do so shall not be used as a basis against the Owner.

## **CONTRACT DOCUMENTS**

1. The Contract Documents are enumerated in the Agreement, and include these Specifications and the Drawings for the City of Waltham.

## **INSPECTION OF THE SITE**

1. It is a requirement of the Contract that the Contractor and his/her subcontractors shall have thoroughly inspected the site during the bidding period. By submitting a bid they confirm that they are thoroughly familiar with the site and all existing conditions which impact and affect their work. Requests for extra compensation will not be considered for any work which could have been foreseen by a visual inspection of the site prior to the start of construction.

## **CONTRACTOR'S USE OF THE SITE**

1. The Contractor shall furnish his/her own toilet facilities on-site.
2. The Contractor shall take all precautions necessary to protect the abutting properties during construction. Any and all damage caused by construction operations shall be repaired.
3. The project site shall be kept clean and free from accumulation of construction waste material and debris.
  - a. The Contractor, his/her Subcontractors, and their employees shall be respectful and courteous of the neighborhood while working on site.

## **CITY OF WALTHAM NOISE ORDINANCE**

1. The Contractor is advised that the City of Waltham has a Noise Ordinance, Section 10-6, which has the authority to regulate the noise generating activities of this Contract. In general the Ordinance prohibits excessive noise created by construction, building, remodeling, excavating, land clearing, or by any of the equipment associated with such work. The Police Department considers the startup or idle running of truck engines and/or equipment prior to 7:00 AM a violation of the ordinance.

## **ENCLOSURES**

1. Provide at the earliest practical time temporary enclosure of materials, work in progress and completed portions of the work to provide protection to the work and the employees.

## **SAFETY AND SECURITY**

1. The Contractor shall be responsible for the safety and security of those areas of the site where construction is occurring and for the safety of the general public.
2. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. He/she shall



**promulgate safety regulations and shall notify the City of Waltham (Owner) of particular hazards.**

- 3. The Contractor shall erect and maintain, as required by existing conditions and progress of work, all reasonable safeguards for safety and security. This includes the construction of barriers and the posting of danger signs and other warnings against hazards.**
- 4. The Contractor shall cooperate with and maintain a close liaison with the City of Waltham (s): School Department, Recreation Department, Planning Department, Police Department, and Fire Department, and he/she shall abide by safety or security related requests from any of these authorities.**

**SECTION 2  
ALLOWANCES**

**ALLOWANCE FOR POLICE DETAIL**

1. The Contractor shall include as a line item in his/her bid, an allowance in the amount of \$4000.00 for the cost of police detail. This sum shall be included in the total bid price proposed by the Contractor.
2. This allowance will cover the cost to the Contractor for police detail, if required to complete the work of this Contract.
  - a. The cost for police detail will be reimbursed to the Contractor as described in Section 01040 – Control of Work, Section 1.05 Traffic Police.
3. If the cost for Police Detail is more or less than the lump sum allowance, the Contract Sum shall be adjusted accordingly by Change Order.
4. The allowance and reimbursement for police detail does not include any provisions for Contractor overhead and profit or other expenses related to police detail, other than the direct costs billed to the Contractor by the City of Waltham Police Department.

**END OF SECTION**

**SECTION 3  
MEASUREMENT AND PAYMENT**

**BID PROPOSAL**

1. **Measurement & Payment – Unit Prices**
  - a. **Measurement for payment for construction of the flood mitigation control structure on the Chest Brook at the Kennedy Middle School shall be on a unit price basis.**

**PAYMENT PROCEDURES**

1. **Contractor shall submit substantiated monthly estimates for progress payments. The period covered by each Application for Payment shall be one (1) calendar month ending on the last day of the month.**
2. **Payment will be made in accordance with the requirements of section 39K, MGL.**
3. **Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include:**
  - a. **List of subcontractors**
  - b. **Schedule of Values**
  - c. **Contractor's Construction Schedule (preliminary if not final)**
  - d. **Products list**
  - e. **Submittals Schedule (preliminary if not final)**
  - f. **Copies of permits**
  - g. **Initial progress report**
  - h. **Certificates of insurance and insurance policies**
4. **Headwall / Outlet Control Structure – Bid Item No. 6**

**ADDITIONAL WORK**

1. **Additional Work, if any. Shall be performed at a mutually satisfactory price agreed upon between the Contractor and the Owner.**
2. **There will be no additional / extra work unless expressly requested, with a fully executed change order, signed by the Mayor.**

**END OF SECTION**

**SECTION 4  
TECHNICAL SPECIFICATIONS**

**GENERAL PROVISIONS**

1. Attention is directed to the General Conditions of the Contract, all Divisions of the Specifications, and the Drawings, all of which apply to the work of this section.

**SECTION 5  
CONTROL OF WORK**

**GENERAL PROVISIONS**

1. Attention is directed to the General Conditions of the Contract, all Divisions of the Specifications and the Contract Drawings, all of which apply to this section.

**PLANT**

1. The Contractor shall furnish equipment which will be efficient, appropriate, and of sufficient quantity to secure a satisfactory quality of work and rate of progress which will insure the completion of the Work within the time stipulated in the Contract Documents. If at any time such equipment appears to the Owner to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character, or increase equipment and the Contractor shall conform to such order. Failure of the Owner to give such order shall in no way relieve the Contractor of his obligations to secure the quality of work and rate of progress required. In addition, the Contractor shall maintain his equipment, including mufflers, oil seals or gaskets, and air pollution control devices, in proper working order.

**PROJECT MANAGEMENT**

1. The Work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient labor and equipment to complete all the necessary work requirements within a minimum period of time and as stated in the Contract Documents.
2. Prior to the start of work, the Contractor shall submit a Progress Schedule in a bar chart form at the preconstruction meeting to the City Engineer for completing the Work.
3. The Contractor is fully responsible for the security and safety of partially completed work until the Project is finally accepted by the Owner and the Landscape Architect.
4. Hours of work for construction activities are limited to 7AM to 4PM Monday through Friday. Any changes to the work schedule must be authorized by the City Engineer.
5. All work areas shall be secured, and materials and equipment shall be removed at the end of each work day.
6. Contractor is obligated to abide by the Waltham Conservation Commission Order of Conditions found in the appendix.
7. The Contractor shall retain on the Project during its progress, a competent fulltime representative. This representative shall not be changed except with the consent of the Owner and City Engineer. The representative shall be in full charge of the Work and all instructions given to him shall be binding.

**CITY OF WALTHAM NOISE ORDINANCE**

1. The Contractor is advised that the City of Waltham has a Noise Ordinance, Section 10-6, which has the authority to regulate the noise generating activities of this Contract. In general, the Ordinance prohibits excessive noise created by construction, building, remodeling, excavating, land clearing, or by

any of the equipment associated with such work. The Police Department considers the startup or idle running of truck engines and/pr equipment prior to 7:00 AM a violation. Permits to waive the noise ordinance must be approved and issued by the Chief of Police.

#### **TRAFFIC POLICE**

1. The Contractor shall provide for traffic control by uniformed police officers during all work within City streets. All bills for police detail must be paid in full by the Contractor. The Contractor will be reimbursed for these payments only after a qualifying bill stamped "PAID" by the City of Waltham Treasurer's Office is submitted to the City Engineer for reimbursement.
2. The rate of payment for any police officer employed by the Contractor shall be at the rate established by the police department providing services for special duty police officers (MGL 149 34B). Payment shall be made by the Contractor within 30 days of billing. Failure to pay an outstanding bill within 30 days may result in a penalty charge to the Contractor for late payment. There will be no reimbursement for any penalties or late charges that may be assessed against the Contractor for late payment. Furthermore, the City Engineer will accept no further request for payment if police detail bills are more than 30 days in arrears.
  - a. The estimated hourly cost for police detail is \$42.00 per hour for each officer; one-half day is \$168.00 per officer; and one full day is \$336.00 per officer. One-half day is minimum charge per day.
3. It is suggested that payments be made in person at the Treasurer's Office and that a photocopy of the bill be presented to the Treasurer's Office at the same time so that it may be stamped "PAID" and then presented to the City Engineer by the Contractor as proof of payment.
4. The Contractor will not be reimbursed for any detail that he fails to cancel when it is not required (inclement weather, change of plans, etc.). Reimbursement shall be made on all qualifying bills stamped "PAID" by the appropriate Treasurer's Office, less any amount for unnecessary details not cancelled by the Contractor, and presented to the Landscape Architect. Reimbursement may be entered in the next following request for payment.

#### **SITE INVESTIGATION OF EXISTING CONDITIONS**

1. The Contractor acknowledges that he/she has satisfied himself/herself as to the conditions existing at the Site of the Work, the type of equipment required to perform the Work, the quality and the quantity of the materials to be furnished insofar as this information is reasonable ascertainable from an inspection of the Site, as well as from information presented by the Specifications made a part of the Contract. Any failure of the Contractor to acquaint himself/herself with available information will not relieve him/her from the responsibility for properly estimating the difficulty or cost of successfully performing the Work.
2. No claim for extra compensation or extension of time will be allowed due to the Contractor's failure to properly estimate the quantities, locations, and measurements of all items required to complete the Work.
3. Report any discrepancies to the City Engineer and request his/her interpretation.

#### **PROTECTION OF WORK AREA**

1. The Contractor shall secure all work areas by 4 PM each work day.

2. All of the Contractor's equipment, supplies, etc. left on-site, shall be secured daily. In no case will the Owner assume responsibility for damage or loss of materials, tools or equipment left on-site.
3. The Contractor shall take precautions to prevent injury to the public due to open excavations or excavated materials. All trenches, excavated materials, equipment, or other obstacles which could be dangerous to the public shall be secured in an agreed upon staging area.

#### **LAWS AND REGULATIONS**

1. The Contractor shall keep himself/herself fully informed of all State and Federal laws and Municipal ordinances and regulations in any manner affecting those engaged or employed in the Work, or the materials used in the Work, or in any way affecting the conduct of the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.
2. If any discrepancy or inconsistency is discovered in the Plans, Specifications, or Contract for the Work in relation to any such laws, ordinances, regulations, orders or decrees, the Contractor shall forthwith report the same to the City Engineer in writing. He/she shall at all times observe and comply with, and shall cause all his/her agents and employees to observe and comply with all such laws, ordinances, regulations, orders, and decrees, and shall protect and indemnify the Owner and its officers, agents and servants against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, and orders or decrees, whether by himself/herself or his/her employees or subcontractors.

#### **PERMITS AND CODES**

1. Under this Contract, all work shall be as shown in the Contract Drawings and Specifications and shall comply with applicable codes and regulations at the local, county, state, and federal levels. All labor, materials, equipment, and services necessary to make the Work comply with such requirements shall be provided without additional cost to the Owner.
2. Do not close any street, sidewalk, alley, or passageway. Conduct operations as to interfere as little as possible with the use ordinarily made of roads, driveways, alleys sidewalks, or other facilities near enough to the Work to be affected thereby.
3. Where code references are given, the latest issue of that Code in effect at the time of bidding shall be used. Code references are given to indicate the minimum quality and performance acceptable. Where Specifications and/or Contract Drawings indicate more stringent requirements, the Specifications or Contract Drawings shall govern.
4. The Contractor, under this Contract shall be responsible for providing and filing all Plans, Specifications and other documents, paying all requisite fees and secure all permits, inspections and approvals necessary for legal installation and operation of the systems and/or equipment furnished under this Contract, except as otherwise specified.
  - a. Fees for City of Waltham permits will be waived by the City.
5. Comply also with applicable provisions of American National Standard Code for Building Construction ANSI A10.6.

## **INSPECTION AND TESTS**

- 1. All material and workmanship shall be subject to inspection and examination by the City Engineer at any and all times during the construction.**
- 2. All work that is unsatisfactory, or fails to comply with the Specifications in the opinion of the City Engineer, shall be corrected by the Contractor at his own expense to the satisfaction of the City Engineer.**

## **SANITARY REGULATIONS**

- 1. The Contactor shall provide adequate sanitary facilities for the use of those employed on the Work. Such facilities shall be made available when the first employees arrive on the Site of Work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work.**
- 2. The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He/she shall vigorously prohibit the committing of nuisance on the Site of the Work, on lands of the Owner, or an adjacent property.**

## **COORDINATION WITH UTILITIES**

- 1. The Contactor shall coordinate his/her Work with the utility companies to prevent damages or disruption to existing equipment and to coordinate new utility installations. The Contactor shall contact the utility companies owning underground equipment in the area of his work prior to commencing excavation. Contact with the utility companies shall be made sufficiently in advance so they can properly locate their equipment.**
- 2. The Contactor shall be responsible for locating all site items such as utilities which could be affected by this Contract prior to the start of construction. The Contractor shall contact Dig-Safe (1-888-344-7233) prior to the start of construction, and obtain a Certificate verifying that the location work has been completed. Contact the City of Waltham Engineer to verify the location of additional on-site utilities. Contact telephone number and communications companies to verify location of cables.**
- 3. All right-of-way and site utilities (water, sewer, drainage) shall be inspected and approved by the City Engineer's Office.**
- 4. Site information: No representations are made indicating subsurface conditions. It is expressly understood that the Owner/City Engineer will not be responsible for interpretations or conclusions drawn there from the Contactor.**

## **FIRE PROTECTION**

- 1. Gasoline and other flammable liquids shall not be stored on site. They shall be dispensed from UL listed safety containers in conformance with the National Board of Fire Underwriters recommendations. Do not store flammables near buildings.**

## **CLEANUP**

- 1. During the course of Work, the Contactor shall keep the Site in as clean and neat a condition as possible. He/she shall properly dispose of all residues resulting from the work. At the conclusion of the day's work, the Contractor shall leave the entire Site of the Work in a neat and orderly condition.**



# Compliance

(Required Documents.)

# Compliance

The compliance documents in this section must be completed, signed and returned **with your bid package.**

## Purchasing Department

City of Waltham  
610 Main Street  
Waltham, MA 02452

Failure to submit the completed documents will cause the disqualification of the proposal.

### Section Index

Check when Complete

- Non-collusion form and Tax Compliance form..... \_\_\_\_\_
- Corporation Identification Form..... \_\_\_\_\_
- Certificate of Vote Authorization..... \_\_\_\_\_
- Certificate of Insurance (showing all limits of WC &GL)..... \_\_\_\_\_
- Three (3) References..... \_\_\_\_\_
- 5% Bid Bond or Certified Check..... \_\_\_\_\_
- Debarment Certificate ..... \_\_\_\_\_
- Prevailing Wage Certificate..... \_\_\_\_\_
- Right-to-know Law..... \_\_\_\_\_
- OSHA 10 Certificate for all Assigned Employees (MGL ch30, §39M and Ch 149) \_\_\_\_\_

**Before the commencement of the Job, the contractor must provide to the above office:**

- Performance Bond for 50% of the contract value and naming the City of Waltham  
***(letter must be included with your response)***

Your Company's Name: \_\_\_\_\_

Service or Product Bid \_\_\_\_\_

**NOTE:** Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

**NON-COLLUSION FORM AND TAX COMPLIANCE FORM**

**CERTIFICATE OF NON-COLLUSION**

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

\_\_\_\_\_, \_\_\_\_\_  
(Signature of person signing bid or proposal)      Date

\_\_\_\_\_  
(Name of business)

---

**TAX COMPLIANCE CERTIFICATION**

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

\_\_\_\_\_, \_\_\_\_\_  
Signature of person submitting bid or proposal      Date

\_\_\_\_\_  
Name of business

**NOTE**

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

**CERTIFICATE OF VOTE OF AUTHORIZATION**

Date:

I \_\_\_\_\_, Clerk of \_\_\_\_\_ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the \_\_\_\_\_ day of \_\_\_\_\_ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That \_\_\_\_\_ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seat, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, 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 a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that \_\_\_\_\_ is duly elected/appointed \_\_\_\_\_ of said corporation

SIGNED:

(Corporate Seal)

\_\_\_\_\_  
Clerk of the Corporation:

Print Name: \_\_\_\_\_

**COMMONWEALTH OF MASSACHUSETTS**

County of \_\_\_\_\_

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be their free act and deed before me, \_\_\_\_\_

Notary Public;

My Commission expires: \_\_\_\_\_

## CORPORATION IDENTIFICATION

The bidder for the information of the Awarding Authority furnishes the following information.

**If a Corporation:**

Incorporated in what state \_\_\_\_\_

President \_\_\_\_\_

Treasurer \_\_\_\_\_

Secretary \_\_\_\_\_

Federal ID Number \_\_\_\_\_

**If a foreign (out of State) Corporation** – Are you registered to do business in Massachusetts?

Yes \_\_\_\_\_, No \_\_\_\_\_

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

**If a Partnership: (Name all partners)**

Name of partner \_\_\_\_\_

Residence \_\_\_\_\_

Name of partner \_\_\_\_\_

Residence \_\_\_\_\_

**If an Individual:**

Name \_\_\_\_\_

Residence \_\_\_\_\_

**If an Individual** doing business under a firm's name:

Name of Firm \_\_\_\_\_

Name of Individual \_\_\_\_\_

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

Residence \_\_\_\_\_

Date \_\_\_\_\_

Name of Bidder \_\_\_\_\_

By \_\_\_\_\_

Signature

\_\_\_\_\_

Title

Business Address

(POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City

State

Telephone Number

Today's Date

**PROVIDE THREE (3) SERVICE APPROPRIATE REFERENCES**

1. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

2. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

3. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

**NOTE**

**Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.**

**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 project for which the enclosed rates have been provided, A Payroll Form has been printed on the reverse of this page and 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 contract.

In addition, every contractor and subcontractor is required to submit, on a weekly basis, a copy of his or her weekly payroll records to the awarding authority. For every week in which an apprentice is employed, a photocopy of the apprentice's identification card must be attached to the payroll report. Once collected, the awarding authority is also required to preserve those reports for three years.

In addition, each such contractor, subcontractor, or public body shall furnish to the awarding authority directly, 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**

\_\_\_\_\_, 200\_\_

I \_\_\_\_\_, \_\_\_\_\_  
(Name of signatory party) (Title)

I 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 \_\_\_\_\_

Print \_\_\_\_\_





**RIGHT TO KNOW LAW**

Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L. c. 111F, §§8,9 and 10 and the regulations contained in 441 CMR 21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. c. 111F §7 and regulations contained in 441 CMR 21.05. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties, including bid debarment and action to prevent the vendor from selling said substances, or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 111F or M.G.L. are cautioned to obtain and read the laws, rules and regulations referenced above. Copies may be obtained from the State House Bookstore, Secretary of State, State House, Room 117, Boston, MA (617) 727-2834.

---

Authorized Signature Indicating Compliance with the Right-to-know laws:

---

Signature

Date

---

Print Name

**NOTE**

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

## DEBARMENT CERTIFICATION

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the city of Waltham, the contract will be cancelled and the award revoked.

---

Company Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_, State \_\_\_\_\_, Zip Code \_\_\_\_\_

Phone Number (\_\_\_\_) \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Signed by Authorized Company Representative:

\_\_\_\_\_

Print name \_\_\_\_\_

Date \_\_\_\_\_

**10 HOURS OSHA TRAINING CONFIRMATION**

**Chapter 306 of the Acts of 2004**

**CONSTRUCTION PROJECTS**

**AN ACT RELATIVE TO THE HEALTH AND SAFETY ON PUBLIC**

The undersigned hereby certifies that all employees to be employed at a worksite for construction, reconstruction, alteration, remodeling, repair, installation, demolition, maintenance or repair of any public work or any public building estimated to cost more than \$10,000.00 have successfully completed a course in construction safety and health approved by the **United States Occupational Safety and Health Administration** that is at least **10 hours** in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first payroll report for each employee and will comply with all laws and regulations applicable to awards of subcontracts subject to section 44F.

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

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

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

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

Print Name \_\_\_\_\_

\_\_\_\_\_  
Date

***See Chapter 306 of the Acts of 2004***

**NOTE**

**Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.**

# **BID PRICE FORM**

**(Follows)**

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
1	LUMP SUM 1	MOBILIZATION - (Not to exceed 5% of bid) _____ LUMP SUM		
2	LINEAR FOOT 700	CLEAN +/-700 FEET OF EXISTING BROOK FOR OBSTRUCTIONS _____ LINEAR FOOT		
3 Detail	EACH 2	SEWER WATERTIGHT FRAME & COVER - V-2480 _____ EACH		
4 Detail	EACH 3	FLARED END SECTION _____ EACH		
5 156.010	TONS 120	MAINTENANCE PATH _____ TONS		
6 Item #6	LUMP SUM 1	REINFORCED CONCRETE HEADWALL W/ 42 INCH OPENING _____ LUMP SUM		
7 201.600	EACH 2	PRECAST 6' DIA. By 8' DEEP CATCH BASIN (Double Grate Opening) _____ VERTICAL FOOT		

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
8	LINEAR FOOT 70	12 INCH PVC DRAIN PIPE - SDR 35  LINEAR FOOT		
9 201.901	EACH 2	NEW CATCH BASIN HOOD AND TRAP  EACH		
10 221.000	EACH 2	DOUBLE FRAME AND GRATE MUNICIPAL STANDARD OR MHD CASCADE TYPE  EACH		
11 405.000	SQUARE YARDS 16	TRENCH REPAIR (Includes removal of puddle at small traffic island)  SQUARE YARDS		
12	CUBIC YARD 12	BACKFILL AND COMPACT W/SUITABLE MATERIAL  CUBIC YARD		
13 580.000	LINEAR FOOT 30	GRANITE CURB REMOVED AND RESET  LINEAR FOOT		
14	EACH 2	GRANITE INLET STONE - DOUBLE (4' Inlet) VA-6 - 18 " X 8'  EACH		

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
15 129.010	SQUARE YARDS 1650	COLD PLANING  _____ SQUARE YARDS		
16 464.000	GALLONS 50	BITUMEN FOR TACK COAT  _____ GALLONS		
17 460.000	TONS 512	CLASS I BITUMINOUS CONCRETE - TYPE I -1 (ROADWAY) 1 - 1/2 INCH COMPACTED  _____ TONS		
18 460.200	TONS 3	CLASS I BITUMINOUS CONCRETE - TYPE I-1 (SIDEWALKS, DRIVES, PERM. PATCHING, & ADJUSTMENT AREAS)  _____ TONS		
19 644.000	LINEAR FOOT 425	CHAIN LINK FENCE - 4 FEET  _____ LINEAR FOOT		
20 650.200	LINEAR FOOT 12	IN. CHAIN LINK GATE - TY 2 WITH GATE POSTS  _____ LINEAR FOOT		
21 652.000	EACH 2	IN. CHAIN LINK FENCE END POST  _____ EACH		

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
22 653.000	EACH 6	IN. CHAIN LINK CORNER AND INTERMEDIATE BRACE POST  _____		
23 751.000	CUBIC YARD 2	LOAM BORROW  _____		
24 765.000	SQUARE YARDS 6	SEEDING  _____		
25 864.040	SQUARE FOOT 230	PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE (THERMOPLASTIC)  _____		
26 868.040	LINEAR FOOT 340	4" REFLECTORIZED THERMOPLASTIC LINE - YELLOW  _____		
27 868.040	LINEAR FOOT 460	4" REFLECTORIZED THERMOPLASTIC LINE - WHITE  _____		
28 850.221	SQUARE FOOT 50	SAFETY SIGNING FOR CONSTRUCTION OPERATIONS  _____		



ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
29 870.000	DAY 60	PORTABLE MESSAGE BOARD  _____ DAY		
30 141.100	CUBIC YARD 5	TEST PIT  _____ CUBIC YARD		
31 440.000	POUNDS 100	CALCIUM CHLORIDE FOR DUST CONTROL  _____ POUNDS		

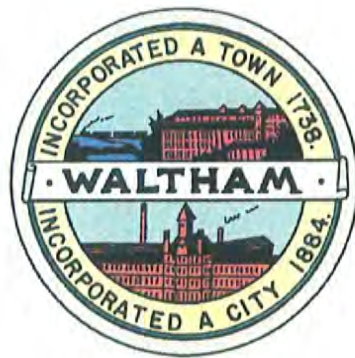
32 999.001	LUMP SUM \$4,000.00	TRAFFIC POLICE  _____ LUMP SUM		\$4,000.00
TOTAL BID PRICE WRITTEN IN WORDS:				TOTAL BID WRITTEN IN

Amounts are to be shown in both words and figures. In case of discrepancies, the unit bid price written in words shall govern.  
 IMPORTANT: 'The Contractor agrees that he will start work no later than ten (10) calendar days after date of the Notice to Proceed.

# TECHNICAL SPECIFICATIONS

## CHESTER BROOK FLOOD ATTENUATION PROJECT

Kennedy Middle School  
655 Lexington Street  
Waltham, MA 02451



CITY OF WALTHAM  
ENGINEERING DEPARTMENT  
119 School Street  
Waltham, MA 02451  
Ph 781-314-3830; Fax 781-314-3844

May 2013

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**GENERAL**

1. This work shall consist of the cold planing of bituminous concrete roadway surfaces to various depths up to 6 inches to produce a uniform surface for the application of a bituminous overlay as required by the ENGINEER. The CONTRACTOR shall cold plane the bituminous concrete surface to the depths, widths, grades and cross sections as indicated and/or as required by the ENGINEER. Material removed shall be disposed of legally and off the site.

**METHOD**

1. Catch basins shall be protected during the cold planing process by inserting silt fabric between each frame and grate. The fabric shall be removed immediately after all cuttings have been removed. Any cuttings that fall into the catch basin shall be removed by the CONTRACTOR.
2. The bituminous concrete surface shall be planed and profiled by a power operated planing machine or a grinder capable of removing, in one pass, a layer of bituminous concrete nine feet. The equipment shall be self-propelled with sufficient power traction and stability to maintain accurate depth of cut and slope and shall be equipped with all necessary safety devices such as flashing lights and back-up signals so as to operate in traffic with complete safety. The equipment will be capable of accurately and automatically establishing profile grades along each edge of the machine by referencing from the existing pavement or from an independent grade control and shall have an automatic system for controlling cross slope at a given rate.
3. All planing machinery shall be equipped with dust control devices to prevent any dust produced in the cutting operation from escaping into the air. Dust control equipment must comply with EPA air quality standards.
4. The CONTRACTOR shall also have the necessary auxiliary grinding or milling machinery to perform the required cutting and trim cutting around castings. Pneumatic rubber-tire mounted equipment shall be used only for trimming and edging operations.
5. The cold plane cuttings from the operation shall be discharged directly from the planer into the CONTRACTOR'S trucks and legally disposed of off the site by the CONTRACTOR in a manner acceptable to the ENGINEER. Unless otherwise specified by the ENGINEER, the materials shall become the property of the CONTRACTOR. Loose materials left on the roadway surface as a result of the cold planing operations shall be removed and disposed of by the CONTRACTOR in the same manner as the planed material.

6. All excess material shall be removed from the site as part of this item. There is no additional measurement or payment for excavation.

**MEASUREMENT**

1. Measurement for cold planing shall be for the number of square yards of material removed and disposed of, regardless of depth, as accepted and measured by the ENGINEER.

**PAYMENT**

1. Payment for cold planing shall be made for the number of square yards of materials cold planed and removed and properly disposed of, regardless of depth, as determined above at the contract unit price for ITEM 129.010 as set forth in the Bid. Said price and payment shall be full compensation for furnishing all equipment, labor, materials, tools, and all else incidental and necessary for the satisfactory completion of this work.

**Payment Item**

129.010

Cold Planing

Square Yards



**ITEM 141.100**

**TEST PITS FOR EXPLORATION**

**CUBIC YARD**

**GENERAL**

1. This work shall consist of the excavation and refill of test pits to determine the location and/or elevations of existing utilities or any other buried items for which the exact location and/or elevation has to be known. Test pits shall be made at locations designated by the Engineer or as requested by the Contractor and approved by the Engineer.

**METHOD**

1. Test pits shall be excavated and backfilled ahead of the work as directed. Special care, including hand excavation, shall be taken so as not to damage any underground utilities or structures.
2. Test pits shall be backfilled immediately after their purpose has been accomplished. Backfill shall be with suitable excavated material thoroughly compacted wherever and whenever practical.
3. The surface of the test pit shall be maintained in a satisfactory condition for traveling over until the excavation of the trench reaches the test pit. This maintenance may require the use of steel plates for cover, as determined by the Engineer. No payment will be made for furnishing or placing such steel plates.

**MEASUREMENT**

1. Test pits will be measured by the cubic yard to the limits indicated by the Engineer. All measurements shall be taken in the field by the Engineer.

**PAYMENT**

1. Payment for test pits shall be made for the number of cubic yards as determined above at the contract unit price for ITEM 141.100, as set forth in the Bid. Said price and payment shall be full compensation for all excavation and backfill, for all labor, tools, equipment, steel plates if required, and all else incidental thereto.

**Payment Item**

141.100

Test Pits for Exploration

Cubic Yard

**ITEM 156.010**

**CRUSHED STONE FOR BEDDING    NOT A PAYMENT ITEM**

**GENERAL**

1. This work shall consist of furnishing all labor, equipment, tools, and materials for and performing all operations in placing and compacting crushed stone for bedding under structures as indicated on the contract drawings or as designated by the Engineer. All work is to complete, in place, compacted and accepted as directed by the Engineer.

**MATERIALS**

1. Crushed stone shall be furnished by the Contractor from sources outside the work site and in the quantities required for completion of the work. Material shall be of the quality specified and is subject to approval by the Engineer before it may be used.
2. Crushed stone shall consist of clean, hard, durable angular pieces and shall be satisfactorily free from loam, clay, fine sand, and any deleterious materials. Crushed stone shall be uniformly graded and shall be three-quarters inch in size.

**MEASUREMENT AND PAYMENT**

1. There shall be no measurement nor payment made for crushed stone for bedding. All crushed stone for bedding shall be considered as a subsidiary item of the work being done and shall be included as part of that applicable item.

**Not a Payment Item**

**ITEM 201.600**

**PRECAST 6' DIAMETER DOUBLE CATCH BASIN**

**EACH**

**GENERAL**

1. This work shall consist of furnishing materials for and constructing double catch basins, furnishing and placing of frames and grates, and performing all excavation and backfill operations in accordance with the Contract Documents and/or as directed by the Engineer. This work shall also include the modification or removal and disposal of the existing catch basin that is being replaced when the existing catch basin would interfere with the construction of the new catch basin.
2. Double catch basin frames shall be set at finished grade in a minimum 4,000 PSI cement concrete collar. The size of the cement collar shall be four inches in depth and will extend to a radius of one foot beyond the frame. Double catch basin top slabs shall be a minimum thickness of 8". Wall sections shall be a minimum of 6" thick and the base section shall be a minimum of 6" thick.

**MEASUREMENT AND PAYMENT**

1. Payment for precast 6-ft diameter double catch basins shall be measured in the field by the Engineer for each unit furnished complete, tested, and accepted as determined by the Engineer. Completed units include the furnishing of all labor, equipment, tools, materials, modification or removal and proper disposal of existing structures or excavation for new catch basin (except non-standard excavation items), removal and disposal of excess or unsuitable excavated materials, 3/4 inch crushed stone, backfilling and compaction (including materials), base, top slab, plugs, catch basin risers, frames, covers, hoods, temporary trench support, for flow diversion, flow handling, bypass pumping, groundwater de-watering , connecting and disconnecting catch basin drain laterals, steel plating, cold patch, , clearing and grubbing, remove and reinstall existing granite curbing to match original conditions, loam borrow, seeding, and any other incidentals necessary to complete the work as specified. Adjustment of frames, grates and covers is included in this item so there shall be no separate payment under ITEM 222.020. Repair of utilities damaged by the Contractor during construction shall be included as part of this item.

**Payment Items**

201.600

Precast 6' Diameter Double Catch Basin

Each



**ITEM 201.901**

**NEW CATCH BASIN HOOD AND TRAP**

**EACH**

**GENERAL**

1. This item shall include the installation of a new cast iron hood into existing catch basins as specified by the Engineer or the removal and/or resetting of an existing hood and plugging the excess openings in catch basin walls. Hoods installed in new catch basins constructed under this contract are not to be paid under this item. Any hood damaged by the Contractor through his own negligence shall be replaced at no additional cost to the City.

**MATERIALS**

1. All Catch Basin Hoods shall be as manufactured by E.L. LeBaron Foundry Co., model L-219, Neenah Foundry Co., Campbell Foundry Co., or equal. All hoods shall conform to MHD Construction Standards, and must be approved by Engineer before being installed.

**MEASUREMENT AND PAYMENT**

1. Measurement and payment shall be by the unit bid price each, which shall include all labor, materials, bricks, mortar, equipment, and any other incidentals necessary for the satisfactory completion of this work as specified and accepted. There shall be no payment under this item for new or proposed hoods that are being paid for as part of some other item within this contract.

**Payment Items**

201.901

New Catch Basin Hood and Trap

Each

**ITEM 221.000**

**FRAME & COVER**

**EACH**

**GENERAL**

1. This work shall consist of furnishing, stacking, setting and adjusting to final grade any new castings and any existing castings to be removed and reset as required.
2. When existing castings, in the opinion of the Engineer, are found to be defective through no fault of the Contractor, they shall be removed and disposed of by the Contractor. A new complete casting shall then be furnished, installed and adjusted to final grade by the Contractor as directed by the Engineer.
3. Any casting damaged by the Contractor through his own negligence shall be replaced by him at no additional cost to the City.

**MATERIALS**

1. For manholes, the frames shall conform to LeBaron type LA 246 or the equivalent. Covers shall conform to LeBaron type L24C19 or the equivalent. When ordering the covers, specify whether the top is to be lettered as "SEWER" or "DRAIN".

**METHOD**

1. Frames shall be set in full mortar beds true to the lines and grades established by the Engineer. All voids beneath the bottom flange shall be entirely filled to make a water-tight fit. A ring of mortar at least one (1) inch thick shall be placed around the outside of the bottom flange and shall extend to the outer edge of the masonry structure. A concrete collar shall be installed as indicated on the design plans.

**MEASUREMENT**

1. Measurement for frames and covers shall be made for the number of units furnished, placed, adjusted to final grade and accepted as determined from actual count by the Engineer.

**PAYMENT**

1. Payment shall be made based on the number of completed units as determined above at the contract unit price for ITEM 221.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing, stacking, setting and adjusting all castings, for materials including mortar, hot mix asphalt, red clay bricks, gravel, and for all tools, labor, equipment and all else incidental to the work within this item.

2. There shall be no payment under this item for existing castings or for new or proposed castings that are being paid for as part of some other item within this contract.

**Payment Items**

221.000

Frame and Cover

Each

ITEM 222.010  
& 222.030

FRAME & GRATE OR COVER (IN-PLACE)  
(MUNICIPAL STANDARD or MHD CASCADE TYPE)

EACH

### **GENERAL**

1. This work shall consist of furnishing, setting and adjusting to final grade any new castings as required. When existing castings, in the opinion of the ENGINEER, are found to be defective through no fault of the CONTRACTOR, they shall be removed and disposed of by the CONTRACTOR. A new complete casting shall then be furnished, installed and adjusted to final grade by the CONTRACTOR as required by the ENGINEER. Any casting damaged by the CONTRACTOR through his own negligence shall be replaced by him at no additional cost to the City.

### **MATERIALS**

1. For catch basins, the frames and double grates shall conform to Neenah Foundry – R – 3287-5 or equivalent.
2. For manholes, the frames shall conform to East Jordan Iron Works – V-2480 Watertite frame and cover or the equivalent. Covers shall specify whether the top is to be lettered as "SEWER"

### **METHOD**

1. Frames shall be set in full mortar beds true to the lines and grades established by the ENGINEER. All voids beneath the bottom flange shall be entirely filled to make a water-tight fit. A ring of mortar at least one inch thick shall be placed around the outside of the bottom flange and shall extend to the outer edge of the masonry structure.

### **MEASUREMENT**

1. Measurement for frames and grates or covers shall be made for the number of units furnished, placed, adjusted to final grade and accepted as determined from actual count by the ENGINEER.

### **PAYMENT**

1. Payment shall be made based on the number of completed units as determined above at the contract unit price for ITEMS 222.010 & 222.030 as set forth in the Bid. Said price and payment shall be full compensation for furnishing, setting and adjusting all castings, for materials including mortar, bituminous, red clay bricks, gravel, and for all tools, labor, equipment and all else incidental to the work within this item. There shall be no payment under this item for existing castings

or for new or proposed castings that are being paid for as part of some other item within this contract.

**Payment Items**

222.010	Frame and Grate or Cover (In-Place)(Municipal Standard)	Each
222.030	Frame and Grate or Cover (In-Place)(MHD Cascade Type)	Each

**ITEM 405.000**

**TRENCH REPAIR**

**SQUARE YARD**

**GENERAL**

1. This work shall consist of repairing temporary trench patches throughout the city which were previously installed by others. Work shall include saw cutting and excavation of the temporary patch, compacting the subgrade, applying a 1½" binder course and returning on the following day to apply a 1½" wearing course. Trenches are generally 100 to 400 square feet and a located throughout the city.

**MATERIALS**

1. Class I bituminous concrete pavement, Type I-1, shall conform to the requirements of Section 560.00 of the current Edition of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, Department of Public Works, including any addenda or amendments thereto.
2. Bituminous concrete shall be spread at a temperature of not less than 225 degrees Fahrenheit and all initial rolling or tamping shall be performed when the temperature of the mixture is such that the sum of the air temperature plus the temperature of the mixture is between 300 and 375 degrees Fahrenheit. All mixtures shall be placed only when the atmospheric temperature is above 40 degrees Fahrenheit.
3. Bituminous concrete for wearing surfaces and base courses shall be spread in individual layers and compacted to the required lines, grades and cross section. Each completed surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions, or irregularities. Where new bituminous meets existing bituminous surfaces, an emulsifying agent shall be applied to seal the joint. A sand overcoat shall then be applied over the emulsifying agent.

**MEASUREMENT**

1. All bituminous used for trench repair shall be paid for on the basis of square yards as measured by the OWNER. Only bituminous concrete placed at the required depth and within the limits specified by the OWNER will be accepted for payment.

**PAYMENT**

1. Payment for Trench Repair shall be made for the number of square yards as determined above at the Contract unit price for ITEM 405.000 as set forth in the Bid. Said price and payment shall be full compensation for all saw cutting, excavation and disposal, fine grading and compaction, spreading and compacting bituminous concrete, emulsifying and sanding of all joints, and for furnishing all tools, labor, materials, equipment, and all else incidental thereto.

2. There is a puddle / localized low spot at the traffic island. (Intersection of Jack's Way and Waltham High School driveway) this low point is to be cut out, patched to eliminate small puddle of water.

**Payment Item**

405.000

Trench Repair

Square Yard

**ITEM 440.000**

**CALCIUM CHLORIDE FOR DUST CONTROL**

**POUNDS**

**GENERAL**

1. This work shall consist of furnishing and applying approved dust control material to the surface of the subgrade or elsewhere as required by the ENGINEER.

**MATERIALS**

1. Calcium Chloride shall conform to the requirements of AASHO M144, Type I or Type II.

**APPLICATION**

1. Calcium Chloride shall be uniformly applied at the rate of three-quarters pounds per square yard or as required by the ENGINEER.

**MEASUREMENT**

1. Calcium Chloride will be measured by the pound and the quantity to be paid for shall be the actual weight of the material furnished and applied in place.
- 2.

**PAYMENT**

1. Payment shall be made for the amount of Calcium Chloride furnished and placed as determined above at the Contract price for ITEM 440.000 as set forth in the Bid.

**Payment Item**

440.000

Calcium Chloride

Pounds



<u>ITEM 460.000</u>	<u>CLASS I BITUMINOUS CONCRETE</u> <u>TYPE I-1 (ROADWAY)</u>	<u>TONS</u>
<u>ITEM 460.100</u>	<u>CLASS I BITUMINOUS CONCRETE</u> <u>TYPE I-1 (SIDEWALKS, DRIVES,</u> <u>PERM. PATCHING &amp; ADJUSTMENT AREAS)</u>	<u>TONS</u>
<u>ITEM 460.300</u>	<u>CLASS I BITUMINOUS CONCRETE</u> <u>TYPE I-1 (ROADWAY) NIGHT WORK</u>	<u>TONS</u>

**GENERAL**

1. This work shall consist of fine grading and compaction of gravel base material and/or crusher run base material prior to placing mix, and furnishing, spreading and compacting bituminous concrete base courses and wearing surfaces in accordance with the details shown on the Contract Drawings, as specified in these Specifications, or as required by the ENGINEER.

**MATERIALS**

1. Class I bituminous concrete pavement, Type I-1, shall conform to the requirements of Section 560.00 of the current Edition of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, Department of Public Works, including any addenda or amendments thereto. The City of Waltham has the option of requesting a modified state top when deemed necessary.
2. Bituminous concrete shall be spread at a temperature of not less than 225 degrees Fahrenheit and all initial rolling or tamping shall be performed when the temperature of the mixture is such that the sum of the air temperature plus the temperature of the mixture is between 300 and 375 degrees Fahrenheit. All mixtures shall be placed only when the atmospheric temperature is above 40 degrees Fahrenheit.
3. Bituminous concrete for wearing surfaces and base courses shall be spread in individual layers and compacted to the required lines, grades and cross section.
4. Rolling shall commence at the lower edges and shall progress toward the highest portion. Under no circumstances shall the center be rolled first. Each completed surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions, or irregularities.
5. Where new bituminous meets existing bituminous surfaces, an emulsifying agent shall be applied to seal the joint. A sand overcoat shall then be applied over the emulsifying agent.

**MEASUREMENT**

1. All bituminous used for roadway and sidewalk bases and surfaces will be paid for on the basis of weight and shall be measured by tickets delivered with each load. The tickets shall be signed by a certified weigher and shall be countersigned by the ENGINEER. The tickets shall clearly show the total, tare, and net weights. Loads represented by tickets not showing the weights as specified above will not be accepted for payment. Only bituminous concrete placed at the required depth and within the limits specified by the ENGINEER will be accepted for payment.

**PAYMENT**

1. Payment for bituminous concrete shall be made for the number of tons as determined above at the Contract unit price for ITEMS 460.000, 460.100 and 460.300 as set forth in the Bid. Said price and payment shall be full compensation for all fine grading and compaction, for furnishing, spreading and compacting bituminous concrete, emulsifying and sanding of all joints, and for furnishing all tools, labor, materials, equipment, and all else incidental thereto.

**Payment Items**

460.000	Class I Bituminous Concrete Type I-1 (Roadway)	Tons
460.100	Class I Bituminous Concrete Type I-1 (Sidewalks, Drives, Permanent Patching & Adjustment. Areas)	Tons
460.300	Class I Bituminous Concrete Type I-1 (Roadway) Night Work	Tons



ITEM 460.200

CLASS I BITUMINOUS CONCRETE  
TYPE I-1 (PATCHING)

TONS

**GENERAL**

1. This work shall consist of fine grading and compaction of gravel base material and/or crusher run base material prior to placing mix, and furnishing, spreading and compacting bituminous concrete base courses and wearing surfaces in accordance with the details shown on the Contract Drawings, as specified in these Specifications, or as directed by the ENGINEER.

**MATERIALS**

1. Class I bituminous concrete pavement, Type I-1, shall conform to the requirements of Section 460.00 of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, ENGINEERING DEPARTMENT.

**METHODS**

1. The CONTRACTOR shall provide a thermometer for the use of the ENGINEER that is specifically designed for measuring the temperatures set forth below.
2. Bituminous concrete shall be spread at a temperature of not less than 225 degrees Fahrenheit and all initial rolling or tamping shall be performed when the temperature of the mixture is such that the sum of the air temperature plus the temperature of the mixture is between 300 and 375 degrees Fahrenheit. All mixtures shall be placed only when the atmospheric temperature is above 40 degrees Fahrenheit.
3. The edges of the trench shall be sawcut prior to installation of bituminous concrete.
4. Bituminous concrete for wearing surfaces and base courses shall be spread in individual layers and compacted to the required lines, grades and cross section.
5. Rolling shall commence at the lower edges and shall progress toward the highest portion. Vibratory rollers are not to be used without the approval of the ENGINEER.
6. Each completed surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions, or irregularities.
7. Where new bituminous meets existing bituminous surfaces, an emulsifying agent shall be applied to seal the joint. A sand overcoat shall then be applied over the emulsifying agent.

8. All trench patches shall be maintained until the end of the contract period or a minimum of 90 days after installation. Any patches which settle during the 90-day maintenance period will be removed and replaced at no additional cost to the owner.
9. Any paving material that adheres to concrete sidewalks shall immediately be removed.
10. The price for temporary patch shall include excavation of temporary patch and compaction prior to installation of the permanent trench patch.

**MEASUREMENT**

1. All bituminous used for roadway and sidewalk bases and surfaces will be paid for on the basis of weight and shall be measured by tickets delivered with each load. The tickets shall be signed by a certified weigher and shall be countersigned by the ENGINEER. The tickets shall clearly show the total, tare, and net weights. Loads represented by tickets not showing the weights as specified above will not be accepted for payment. Only bituminous concrete placed at the required depth and within the limits specified by the ENGINEER will be accepted for payment.

**PAYMENT**

1. Payment for bituminous concrete shall be made for the number of tons as determined above at the Contract unit price for ITEMS 460.000, 460.100 and 460.200 as set forth in the Bid. Said price and payment shall be full compensation for all sawcutting edges, fine grading and compaction, for all street sweeping prior to application of pavement, for furnishing, spreading and compacting bituminous concrete, emulsifying and sanding of all joints, maintaining all trenches, and for furnishing all tools, labor, materials, equipment, and all else incidental thereto.

**Payment Item**

460.200	Class 1 Bituminous Concrete Type I-1 (Patching)	Tons
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**ITEM 464.000**

**BITUMEN FOR TACK COAT**

**GALLONS**

**GENERAL**

1. This work shall consist of furnishing and placing of a bituminous tack coat prior to the placement of Class I bituminous concrete for resurfacing. All work and materials shall be furnished and placed by the CONTRACTOR.

**MATERIALS AND METHODS**

1. Bituminous tack material shall conform to the requirements of Section M3.03.0 of the current Edition of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts.
2. The application shall be done by means of an approved mechanical pressure distributor tanker truck only with a heating device capable of heating the material evenly up to a temperature of 425° Fahrenheit. It shall also be equipped with a distribution spray bar of a type that will distribute the bituminous tack material uniformly under a pressure of not less than 30 lbs. per square inch, without streaks and/or spots, so as to provide an equal and uniform coverage on the existing surface.
3. The tanker truck shall be equipped with a gauge to accurately measure the gallons applied. The tanker truck shall also be so designed as to enable the operator to control the rate of flow and to provide a positive cut-off to prevent dripping of the nozzles when shut off. The bitumen shall be applied at a rate as described above.
4. The application rate for the bitumen shall be 15 square yards per gallon.

**MEASUREMENT**

1. Measurement for bitumen for tack coat shall be for the number of gallons actually furnished, placed and accepted as determined by the OWNER and/or his representative. The OWNER and/or his representative may elect to use the measured amount from printout slips of actual gallons used as received from the tanker truck.

**PAYMENT**

1. Payment for bitumen for tack coat shall be made for the number of gallons furnished, placed and accepted as determined above at the Contract unit price for ITEMS 464.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and placing all materials and for furnishing all tools, equipment, labor, and all else incidental thereto to complete the work within this item.

**Payment Item**

464.000

Bitumen for Tack Coat

Gallons

**ITEM 580.000**

**CURB REMOVED AND RESET**

**LINEAR FOOT**

**GENERAL**

1. This work shall consist of removing existing curb and/or curb corners and resetting them to grade in the same location in accordance with these specifications, as shown on the Contract Drawings, and/or as required by the ENGINEER. The CONTRACTOR assumes full responsibility for any damages incurred in the removal and resetting processes or any damages incurred while executing said work.

**METHODS**

1. Unless otherwise required by the ENGINEER, curb shall be set to the lines and grades shown on the plans and fitted together as closely as possible. Crusher run shall be added and hand tamped to fill any voids between the undisturbed earth and the bottom of the curb so the curb is supported along two points of its entire length. The center and both ends of each curb length shall be left open for cement concrete. On the day of the curb installation, 6" x 6" beds of cement concrete shall be poured front and back, and the concrete shall flow under the curb. Care shall be taken not to affect the line and/or grade of the curb. Joints between curbstones shall be filled with mortar and exposed surfaces shall be neatly pointed.

**MEASUREMENT**

1. Payment for granite curb removed and reset shall be the number of linear feet of curb actually removed and reset as measured and accepted by the ENGINEER. The quantity of curved granite curb and granite curb corners removed and reset shall be measured along the outer radius.

**PAYMENT**

1. Payment for curb and/or curb corners removed and reset shall be made for the number of linear feet of curb and/or curb corners actually removed and reset as determined above at the Contract unit prices for ITEM 580.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing all labor, tools, equipment, excavation, gravel borrow, backfill, and all else incidental thereto.

**Payment Item**

580.000

Curb Removed and Reset

Linear Foot



<u>ITEM 644</u>	<u>CHAIN LINK FENCE</u>	<u>LINEAR FOOT</u>
<u>ITEM 644.1</u>	<u>IN. CHAIN LINK FENCE</u> <u>(SPRING TENSION WIRE)</u> <u>TY 1 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 644.2</u>	<u>IN. CHAIN LINK FENCE</u> <u>(SPRING TENSION WIRE)</u> <u>TY – 2 (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 645.1</u>	<u>IN. CHAIN LINK FENCE</u> <u>(PIPE TOP RAIL)</u> <u>TY 1 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 645.2</u>	<u>IN. CHAIN LINK FENCE</u> <u>(PIPE TOP RAIL)</u> <u>TY 2 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 646.1</u>	<u>IN. CHAIN LINK FENCE</u> <u>(CABLE TOP)</u> <u>TY 1 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 646.2</u>	<u>IN. CHAIN LINK FENCE</u> <u>(CABLE TOP)</u> <u>TY 2 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 647.1</u>	<u>IN. CHAIN LINK FENCE</u> <u>(PIPE TOP RAIL)</u> <u>WITH BARBED WIRE</u> <u>TY 1 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 647.2</u>	<u>IN. CHAIN LINK FENCE</u> <u>(PIPE TOP RAIL)</u> <u>WITH BARBED WIRE</u> <u>TY 2 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 648.1</u>	<u>IN. CHAIN LINK FENCE</u> <u>(CABLE TOP)</u> <u>WITH BARBED WIRE</u> <u>TY 1 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 648.2</u>	<u>IN. CHAIN LINK FENCE</u> <u>(CABLE TOP)</u> <u>WITH BARBED WIRE</u> <u>TY 2 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 649.1</u>	<u>IN. CHAIN LINK FENCE</u> <u>(SPRING TENSION WIRE)</u> <u>WITH BARBED WIRE</u> <u>TY 1 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 649.2</u>	<u>IN. CHAIN LINK FENCE</u> <u>(SPRING TENSION WIRE)</u> <u>WITH BARBED WIRE</u> <u>TY 2 – (LINE POST – OPTION)</u>	<u>LINEAR FOOT</u>
<u>ITEM 650.1</u>	<u>IN. CHAIN LINK GATE</u> <u>TY 1 – WITH GATE POSTS</u>	<u>LINEAR FOOT</u>



<u>ITEM 650.2</u>	<u>IN. CHAIN LINK GATE</u> <u>TY 2 – WITH GATE POSTS</u>	<u>LINEAR FOOT</u>
<u>ITEM 651.1</u>	<u>IN. CHAIN LINK GATE</u> <u>TY 1 – WITH GATE POSTS</u> <u>AND BARBED WIRE</u>	<u>LINEAR FOOT</u>
<u>ITEM 651.2</u>	<u>IN. CHAIN LINK GATE</u> <u>TY 2 – WITH GATE POSTS</u> <u>AND BARBED WIRE</u>	<u>LINEAR FOOT</u>
<u>ITEM 652.0</u>	<u>IN. CHAIN LINK FENCE</u> <u>END POST</u>	<u>EACH</u>
<u>ITEM 653.0</u>	<u>IN. CHAIN LINK CORNER</u> <u>AND INTERMEDIATE</u> <u>BRACE POST</u>	<u>EACH</u>
<u>ITEM 654.0</u>	<u>IN. CHAIN LINK FENCE FABRIC</u>	<u>LINEAR FOOT</u>

**GENERAL**

1. This work shall consist of the construction of chain link fence in accordance with these specifications, and in close conformity with the lines and grades shown on the plan or established by the Engineer. Chain link fence shall be either Type 1 Zinc-Coated Steel or Type 2 Aluminum-Coated Steel.

**MATERIALS**

1. Materials shall meet the requirements specified in the following Subsections of Division III, Materials:

Chain Link Fences and Gates	M8.09.0
Bonded Vinyl Coated Chain Link Fences, Posts, Rails, Fabric, Gates, and Accessories	M8.09.2
4000 psi, 1 ½”, 565 Cement Concrete Bases	M4.02.00
Paint, High Zinc Dust Content – Galvanizing Repair	M7.04.11

**METHODS**

1. The posts shall be set true to the line and grade of the proposed fence.
2. End, Corner, and Intermediate Brace Posts shall be set in concrete bases as shown in the Construction Standards.
3. The posts in masonry walls shall be set in pipe sleeves or sockets.
4. All line posts, except those which are unstable due to soil condition as described hereinafter, shall have drive anchor assemblies as shown in the Construction Standards.

5. Line Posts, which in the opinion of the Engineer are unstable due to soil condition, (such as in swamps or seasonal wet areas) shall be placed in a concrete base as shown in the Construction Standards.
6. Where solid rock is encountered without an overburden of soil, line posts shall be set a minimum depth of 8 inches, and end, corner, gate and intermediate posts a minimum of 12 inches into the solid rock. The hole shall have a minimum width or diameter of one inch greater than the largest dimension of the post section to be set. The posts shall be cut, before installation to lengths which will give the required length of post above ground, or if the Contractor so elects, he may use an even length of post above ground, or if the Contractor so elects, he may use an even length of post set at greater depth into the solid rock.
7. After the post is set and plumbed the hole shall be filled with grout consisting of one part Portland cement and one part clean, well graded sand. The grout shall be thoroughly worked into the hole so as to leave no voids. Where posts are set in the above manner, concrete footings will not be required.
8. Where solid rock is covered by an overburden of soil or loose rock, the posts shall be set to the full depth shown on the standard drawing unless the penetration into solid rock reaches the minimum depths specified above, in which case the depth of penetration may be terminated. Concrete footings shall be constructed from the solid rock to the top of the ground as designed. Grouting will be required on the portion of the posts in solid rock.
9. Intermediate Brace Posts as used in these specifications, shall be spaced at 500-foot maximum intervals.
10. Gate, end, corner, and intermediate brace posts shall be braced as shown on the standard drawing. Changes in line of 30 degrees or more shall be considered as corners.

#### 1. FOUNDATION BASES

- a. Forms for placing concrete bases will not be required. Chamfer or bevel edges will not be required.
- b. Where chain link fences are used to enclose Engineers field office and material buildings, the posts shall be set in ground without concrete bases to facilitate ease in removal later.

#### 2. TOP RAIL

- a. Top rails shall pass through the ornamental tops of line posts, forming a continuous brace from end to end of each stretch of fence. Lengths of top rail shall be jointed by sleeve type couplings. Top rails shall be securely

fastened to terminal posts by pressed steel fittings. On curves with a radius of less than 500 feet the top rail shall be bent true to the curve.

### 3. TOP TENSION CABLE

- a. Top tension cable shall pass through the ornamental top of the line posts. One continuous length of cable shall be used between pull posts. The cable shall pass through the pull post top and down to the base of the next line post where it shall be attached to the base of line post with a turnbuckle. Sufficient tension shall be applied to the cable to allow maximum sag of  $\frac{1}{4}$  inch between posts after the chain link mesh has been attached to the cable. The Contractor shall provide temporary bracing on intermediate brace posts when applying tension to one length of cable at a time, to prevent undue stresses in the intermediate brace post.
- b. After tension has been applied to the cables, a wire rope clip shall be placed around both cables one on each side of the intermediate brace posts, and the clips securely tightened. Clips shall be placed as close to the posts as possible to minimize the deflection of the post if one of the cables should be parted.
- c. The cable shall be fastened to the top of the end intermediate brace post with an eye bolt through the post and a turn-buckle connecting the eye bolt to the cable. The end intermediate post shall be braced to the bottom of the end post with a short length of cable attached. A length of cable shall connect the end intermediate brace post and end post at the top.
- d. Eye bolts shall have a shoulder on the eye end and shall be provided with a nut and lock washer. Where the eye bolt is to be installed through a pipe section, 2 lead washers shall be placed against the shoulder of the eye, and a lead washer backed and the nut tightened sufficiently to seal the hole in the pipe.
- e. A galvanized iron strap  $\frac{1}{4}$  inch in thickness by 2 inches in width, formed as shown on the standard drawing, shall be provided for the attachment of eye bolts to the base of "H" column post in order to take the strain of the cable tension off the web of the "H" column.
- f. All holes drilled in steel post sections shall be cleaned and painted before the eye boots are installed with 2 coats of paint, High Zinc Dust Content – Galvanizing Repair (M7.04.11).
- g. The ends of all cables shall be seized with annealed iron wire passed around the end of cable and the line cable. The seizing shall be at least 1 inch in width.

#### 4. SPRING TENSION WIRE

- a. Spring tension wires shall be placed ten inches (10") from the top and bottom of the line posts, corner posts, end posts and intermediate brace posts. The spring tension wire shall be fastened to each line post with a No. 6 gauge steel clip.
- b. The wires shall be fastened to end posts, corner posts and intermediate brace posts with an end band and a minimum of five (5) turns around the spring tension wire to end the installation. One continuous length of spring tension wire shall be used between intermediate brace posts.
- c. Sufficient tension shall be applied to create a tension in the spring tension wire so that no sag is visible. On completion of the installation the spring tension wire shall be attached to the fence fabric with hog rings of No. 11 gauge placed every twelve (12) inches + top and bottom.

#### 5. FENCE FABRIC

- a. Chain link fabric shall be placed on the fact of the posts designated by the Engineer, except that on curves the fence shall be placed on the face of the post which is on the outside of the curve.
- b. The chain link fabric shall be placed approximately 4 inches above the ground and on a straight grade between spots.
- c. The fabric shall be stretched taut and securely fastened to the posts. Stretching by motor vehicle will not be permitted. Fastening to end, gate, corner, and intermediate brace posts shall be with stretcher bars and fabric bands spaced at one foot intervals. The fabric shall be cut and each span attached independently at all intermediate brace and corner posts. Fastening to post, top rail, top tension cable or spring tension wire shall be with wire, metal bands, hog rings, or by other approved method.
- d. Rolls of wire fabric shall be joined by weaving a single strand into the ends of the rolls to form a continuous mesh.
- e. The ends of the fence shall be installed to taper inward. Installation procedures may be varied to comply with the manufacturer's recommendations with the approval by the Engineer.

#### 6. GATES

- a. Chain link fabric shall be fastened to the end bars of the gate frame by stretcher bars and fabric bands, and to the top and bottom bars of the gate

frames by tie wires in the same manner as specified for the chain link fence fabric; or by other standard methods if approved by the Engineer.

b. The height of the gate frame shall be approximately as follows:

6' Fence 5'6"                  5' Fence 4'6"                  4' Fence 3'6"                  3' Fence 2'6"

**MEASUREMENT**

1. Chain link fence will be measured, approximately parallel to the ground by the linear foot of the completed fence, exclusive of openings from outside of outside of end posts.
2. Gates with gate posts will be measured between centers of the gate posts.

**PAYMENT**

1. Payment for these items will be based on the contract unit price per linear foot, complete in place, except for rock excavation, which shall include all drive anchors, line posts, fabric, top rail, cable or wire fasteners, clips and all material and equipment necessary to complete the work in a satisfactory manner. Allowance for rock excavation will be as specified under Class B Rock Excavation.
2. Gates with Gate Posts will be paid for at the contract unit price per linear foot of the height specified and the respective widths shown on the plans complete in place. Allowance for rock excavation will be made as specified under Class B Rock Excavation.
3. End post including brace will be paid for at the contract unit price each under item for Chain Link Fence End Post, complete in place. Corner and intermediate brace post will be paid for at the contract unit price each for Chain Link Fence Corner and Intermediate Brace Post, complete in place. The chain link fence posts shall be of the type used throughout the installation.
4. Concrete bases for link posts, if required, shall be paid for under Item 901.3 4000 psi, 1 1/2", 565 Cement Concrete Masonry for Post Foundation, which shall include the excavation, except rock excavation, which shall be paid under Class B Rock Excavation.

**Payment Items**

644.1	In. Chain Link Fence (Spring Tension Wire) Ty 1 – (Line Post – Option)	Linear Foot
644.2	In. Chain Link Fence (Spring Tension Wire)	Linear Foot

Ty-2 (Line Post-Option)		
644.3	In. Chain Link Fence (Spring Tension Wire) Vinyl Coated-(Line Post-Option)	Linear Foot
645.1	In. Chain Link Fence (Pipe Top Rail) Ty 1-(Line Post-Option)	Linear Foot
645.2	In. Chain Link Fence (Pipe Top Rail) Ty 2-(Line Post-Option)	Linear Foot
645.3	In. Chain Link Fence (Pipe Top Rail) Vinyl Coated-(Line Post-Option)	Linear Foot
646.1	In. Chain Link Fence (Cable Top) Ty 1-(Line Post-Option)	Linear Foot
646.2	In. Chain Link Fence (Cable Top) Ty 2-(Line Post-Option)	Linear Foot
646.3	In. Chain Link Fence (Cable Top) Vinyl Coated-(Line Post-Option)	Linear Foot
647.1	In. Chain Link Fence (Pipe Top Rail) with Barbed Wire Ty 1-(Line Post-Option)	Linear Foot
647.2	In. Chain Link Fence (Pipe Top Rail) with Barbed Wire Ty 2-(Line Post-Option)	Linear Foot
648.1	In. Chain Link Fence (Cable Top) with Barbed Wire Ty 1-(Line Post-Option)	Linear Foot
648.2	In. Chain Link Fence (Cable Top) with Barbed Wire Ty 2-(Line Post-Option)	Linear Foot
649.1	In. Chain Link Fence (Spring Tension Wire) with Barbed Wire Ty 1-(Line Post-Option)	Linear Foot
649.2	In. Chain Link Fence (Spring Tension Wire) with Barbed Wire Ty 2-(Line Post-Option)	Linear Foot
650.1	In. Chain Link Gate, Type 1 with Gate Posts	Linear Foot
650.2	In. Chain Link Gate, Type 2 with Gate Posts	Linear Foot
651.1	In. Chain Link Gate, Type 1 with Gate Posts	Linear Foot

and Barbed Wire

651.2	In. Chain Link Gate, Type 2 with Gate Posts and Barbed Wire	Linear Foot
652.	In. Chain Link Fence End Post	Each
653.	In. Chain Link Comer and Intermediate Brace Post	Each
654.	In. Chain Link Fence Fabric	Linear Foot



**GENERAL**

1. This work shall consist of furnishing and placing loam borrow at the required depths and on approved areas in accordance with these Specifications, as indicated on the Contract Drawings, and/or as required by the ENGINEER. Only screened loam will be accepted for use.
2. All grass areas worked on or disturbed during construction and/or grassed areas shown on the Contract Drawings shall be graded to the necessary depths and covered with loam. The loam shall be fertile natural topsoil loam free from brush, weeds, stumps roots, stones over ½ inch in size, and any other objectionable matter. Respreading of existing on-site loam shall be part of ITEM 765.000 and will not be included with as part of this item.

**METHOD**

1. In sidewalk loam areas, loam shall be placed and uniformly spread on the subgrade. When raked out and rolled, the depth of the loam shall be six inches. The finished surface shall be even with the top of the curb and the face of the sidewalk.
2. If loam is required in adjustment areas, it shall be placed at the depths indicated by the ENGINEER, but not to exceed 3 inches maximum depth.

**MEASUREMENT**

1. Measurement for loam borrow shall be for the number of cubic yards furnished and placed. Measurement shall be made after compaction. This amount shall be measured in the field by the ENGINEER or, at his option, determined from plan or office calculations. This shall not include the respreading of any existing on-site loam. 20% of the measured amount will be added to the final amount to allow for compaction.

**PAYMENT**

1. Payment for loam borrow shall be made for the number of cubic yards furnished and placed as determined above at the Contract unit price for ITEM 751.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and placing loam borrow to the required depths and limits and for furnishing all tools, labor, equipment, materials, and all else incidental thereto. All work shall be done to the satisfaction of the ENGINEER. There will be no separate payment for respreading of existing on-site loam. That shall be considered as part of ITEM 765.000 (SEEDING).



**Payment Items**

751.000	Loam Borrow	Cubic Yards
765.000	Seeding	Square Yards
120.100	Unclassified Excavation	Cubic Yards

**ITEM 765.000**

**SEEDING**

**SQUARE YARDS**

**GENERAL**

1. This work shall consist of the raking, fertilizing, liming, compacting and preparation of loam areas for the furnishing and application of seed. All work shall be done in accordance with these Specifications and/or as required by the ENGINEER. This item shall also include the respreading of existing on-site loam obtained from stripping operations.

**MATERIALS**

1. Lawn seed shall be fresh, clean new crop seed. The seed shall be delivered to the work site with each container bearing the manufacturer's guaranteed analysis. Lawn seed shall be composed substantially as follows and shall be germinative and pure to at least the percentages indicated:

	Proportion	Germinative	Purity
Chewing Fescue or Creeping Red Fescue	25%	85%	97%
Alta Fescue	30%	85%	97%
Domestic Rye Grass	20%	90%	98%
Red Top	15%	90%	92%
White Clover or Alsike	10%	90%	98%

**METHOD**

1. The surface to receive seed shall be raked smooth, without pockets, and pleasing to the eye. The area shall be fertilized, limed, seeded, rolled and watered as required to promote satisfactory grass growth. Any areas or parts of areas that fail to show a satisfactory stand of grass within a reasonable amount of time for any reason shall be fertilized and re-seeded until all areas are covered with an adequate acceptable growth of grass. When the grass has grown, the CONTRACTOR shall, at the direction of the ENGINEER, make a minimum of at least one lawn cutting. Seeding shall be done only within certain times of the year as determined by the ENGINEER. If seeding is done in the fall season, the acceptance of the work shall not be until the end of the next following growing period. Seed shall be placed at a rate of 2 pounds per 1,000 square feet of area to be covered.

**MEASUREMENT**

1. Measurement shall be determined for the number of square yards of area treated and seeded as determined by the ENGINEER. This amount shall be measured in the field by the ENGINEER, or, at his option, determined from plan or office calculations.

## PAYMENT

1. Payment for seed shall be made as determined above at the Contract unit price for ITEM 765.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and placing all seed, for furnishing and spreading all fertilizer and lime, for raking and compaction of all areas affected, for all cutting, for all tools, labor, equipment, materials and all else incidental thereto. All work is subject to approval by the ENGINEER. There will be no payment for respreading of existing on-site loam. This shall be considered as incidental to the work within this item.

### Payment Items

765.000	Seeding	Square Yard
751.000	Loam Borrow	Cubic Yard

**GENERAL**

1. This work shall consist of furnishing, installing, maintaining, repositioning, removing and storing temporary signs for the protection of the traveling public and working personnel during construction and maintenance operations. The design, application and installation of such signs shall comply with the Massachusetts Manual on Uniform Traffic Control Devices, latest edition. All materials provided by the CONTRACTOR under this item shall remain the property of the CONTRACTOR upon completion of this project.

**MATERIALS AND METHODS**

1. Materials required under this section need not be new but must be in excellent condition. Any materials that in the judgment of the ENGINEER are unsatisfactory in appearance or performance shall be removed and immediately replaced by acceptable units at no additional cost to the City. Signs that are missing shall be immediately replaced by the CONTRACTOR at no additional cost to the City. Signs that are not consistent with the use of the roadway shall be removed or covered. All work shall be done by the CONTRACTOR and to the satisfaction of the ENGINEER.
2. Materials shall conform to Sections 828 and 840 of the Commonwealth of Massachusetts Standard Specifications except the plywood material shall conform to the following: Plywood sign panels shall be fabricated from five-ply 5/8" thick Medium Density Overlaid Exterior Type, A-B both sides surface in natural color and the whole conforming with the requirements and tests for the above as set forth in U. S. product Standard PS1-74 for Construction and Industrial Plywood. Plywood shall bear the grade trade mark of an approved testing agency. The entire sign face shall be reflectorized with reflective sheeting conforming to M9.30.0, type III of the Commonwealth of Massachusetts Standard Specifications.
3. Background sheeting shall be fluorescent orange. The maximum spectral radiance factor, in accordance with Section 5.1 of ASTM E991 for the fluorescence shall be 110% minimum for new signs and 60% minimum for weathered signs. Actual size and legend shall be determined by the ENGINEER.

**MEASUREMENT**

1. Measurement for safety signing shall be based on the square foot surface area of the signs. All measurements for safety signing shall be made in the field by the ENGINEER. Sign supports for safety signing are considered incidental to installation of the signs and there shall be no additional payment.

**PAYMENT**

1. Payment for Safety Signing for Construction Operations shall be made based on the square foot area as determined above at the Contract unit price for ITEM 850.221 as set forth in the Bid. Said price and payment shall be full compensation for furnishing, maintaining, repositioning, removing and storing signs, including all labor, equipment, tools, cement concrete, if required, and all else incidental to the satisfactory completion of the work within this item. All work is subject to approval by the ENGINEER.

**Payment Item**

850.221	Safety Signing for Construction Operations	Square Foot
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<u>ITEM 864.040</u>	<u>PAVEMENT ARROWS AND LEGENDS</u>	<u>SQUARE FOOT</u>
	<u>REFLECTORIZED WHITE (THERMOPLASTIC)</u>	
<u>ITEM 865.100</u>	<u>X - WALKS AND STOP LINES</u>	<u>SQUARE FOOT</u>
	<u>REFLECTORIZED WHITE (THERMOPLASTIC)</u>	
<u>ITEM 868.040</u>	<u>4" REFLECTORIZED THERMOPLASTIC LINE</u>	<u>LINEAR FOOT</u>

**GENERAL**

1. The work to be done under these items shall conform to the relevant provisions of Section 860 of the 1988 MDPW Standard Specifications for Highways and Bridges, and the following:

**METHODS**

1. The layout of all necessary field controls by the CONTRACTOR of the several types of traffic line systems shall be approved by the ENGINEER. The width and spacing of stop lines and crosswalks shall be as indicated on the plans.

**MEASUREMENT**

1. Measurement for pavement arrows, legends, crosswalks, stop lines, chevrons and/or gore lines shall be for the actual square foot of area of material furnished and installed by the CONTRACTOR and accepted by the ENGINEER.
2. Measurement for other thermoplastic lines shall be for the actual linear foot of material furnished and installed by the CONTRACTOR and accepted by the ENGINEER. All measurement shall be done in the field by the ENGINEER.

**PAYMENT**

1. Payment for arrows, legends, crosswalks, stop lines, chevrons and/or gore lines shall be for the actual square foot area as determined above at the contract unit prices for ITEMS 864.040 and 865.100 as set forth in the Bid. Payment for other thermoplastic markings shall be for the actual linear foot measurement as determined above at the contract unit prices for ITEMS 868.040 and 868.020 as set forth in the Bid.
2. Said price and payment shall be full compensation for furnishing and placing of all materials, all tools, labor, equipment and all else incidental to the completion of the work within these items.
3. All work is subject to final approval and acceptance by the ENGINEER.

**Payment Items**

864.040	Pavement Arrows and Legends	Square Foot
---------	-----------------------------	-------------

	Reflectorized Thermoplastic	
865.100	X - Walks and Stop Lines Reflectorized White (Thermoplastic)	Square Foot
868.040	4" Reflectorized Thermoplastic Line	Linear Foot

**ITEM 870.000**

**PORTABLE MESSAGE BOARD**

**DAY**

**GENERAL**

1. Portable message boards shall conform to the relevant provisions of Section 6F.52 of the Federal Highway Administration Manual on Uniform Traffic Devices. Message boards shall be solar powered, capable for displaying three alternating messages of three lines, eight characters per line.

**MEASUREMENT**

1. Measurement for each Portable Message Board shall be per day whenever boards are required and accepted by the ENGINEER.

**PAYMENT**

1. Payment for Portable Message Boards shall be as determined above at the contract unit prices for ITEM 870.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing equipment and programming, locating and relocating message boards as required by the ENGINEER. All work is subject to final approval and acceptance by the ENGINEER.

**Payment Items**

870.000

Portable Message Board

DAY



**GENERAL**

1. The CONTRACTOR shall provide such uniformed police officers (outside their regular tour of duty) as the ENGINEER shall deem necessary to avoid, so far as reasonably possible, damage to the safety of persons and substantial interference with the free circulation of traffic. When so required by the ENGINEER, the CONTRACTOR shall make all arrangements in obtaining police assistance. The CONTRACTOR shall pay the amount due for such assistance to the City of Waltham. The CONTRACTOR shall then be reimbursed by the City of Waltham. Police details may be arranged by calling (781) 314-3604.
2. All bills for police details must be paid in full by the CONTRACTOR before reimbursement is made by the City of Waltham. Only bills stamped "PAID" by the City Treasurer's Office will be accepted by the ENGINEER.

**METHOD OF PAYMENT**

1. The CONTRACTOR shall pay to any police officer employed by him the prevailing rate of wage to special duty police officers (MGL Chapter 149, §34B). The quantity on the Bid form for ITEM 999.001 is an estimate for funding and bid comparison purposes. Payment to the CONTRACTOR for special duty police will be made at the rate established by the Waltham Police Department.
2. Payment shall be made by the CONTRACTOR within 30 days of billing. Failure to pay an outstanding bill within 30 days may result in a penalty charge to the CONTRACTOR for late payment. There will be no reimbursement for any penalties or late charges that may be assessed against the CONTRACTOR for late payment. Furthermore, the ENGINEER will accept no further requests for payment if police detail bills are more than 30 days in arrears.
3. The CONTRACTOR will not be reimbursed for any detail that he fails to cancel when it is not required (work does not proceed as scheduled or due to inclement weather, etc.) Reimbursement will be entered in the next estimate for payment.
4. Reimbursement shall be made on all bills stamped "PAID" by the City of Waltham Treasurer's Office and presented to the ENGINEER less any amount for unnecessary details not canceled by the CONTRACTOR when required.
5. It is suggested that payments be made in person at the Treasurer's Office and that a copy of the bill be presented to the Treasurer's Office at the same time so that it may be stamped "PAID" and presented to the ENGINEER by the CONTRACTOR.

**PAYMENT**

1. Payment for special duty police will be made on a dollar for dollar basis as determined above for ITEM 999.001 as set forth in the Bid. Said price and payment shall be full compensation for furnishing all special duty police.

**Payment Item**

999.001

Traffic Police

Lump Sum

## **Typical Standard Details**

Double Catch Basin (CB)

CB – Frame and Cover

Sewer Watertight Frame and Cover

Fence and Gate

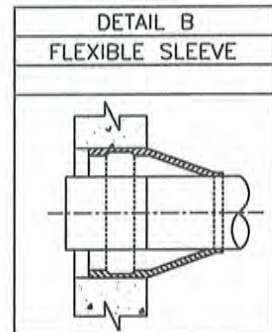
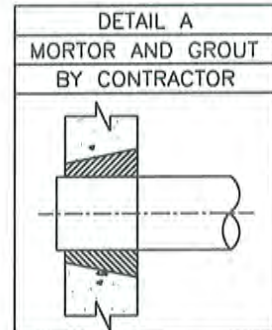
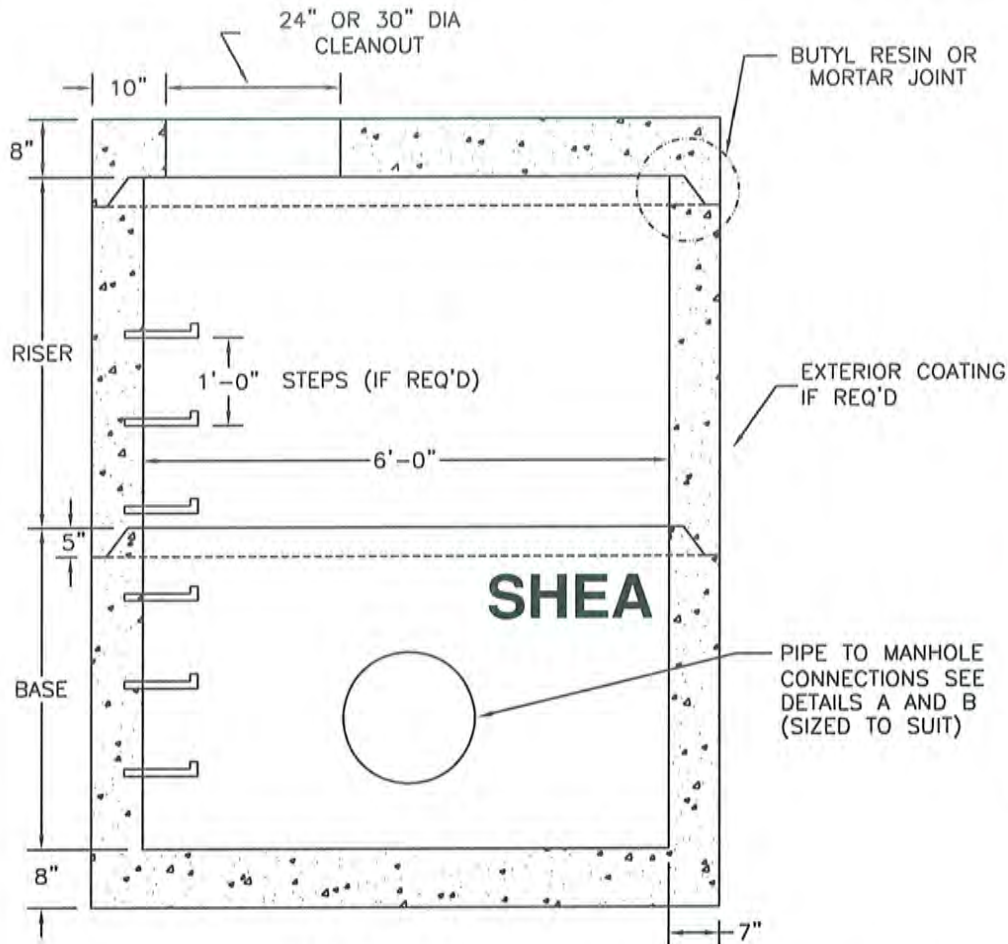
Drain Outlet - Flared End Apron

Headwall with Wings

Pavement Detail

Erosion Control Methods

Roadway Markings Sketch



SECTION VIEW

RISER SECTION

HEIGHT	ITEM NO	WEIGHT
2'-0"	MH-24CS6ID	3,570#
3'-0"	MH-36CS6ID	5,354#
4'-0"	MH-48CS6ID	7,139#
5'-0"	MH-60CS6ID	8,923#
6'-0"	MH-72CS6ID	10,708#

FLAT TOP

HEIGHT	ITEM NO	WEIGHT
1'-0"	MH-FT6ID	3,940#

BASE SECTION

HEIGHT	ITEM NO	WEIGHT
2'-0"	MH-24S6ID	6,357#
3'-0"	MH-36S6ID	8,142#
4'-0"	MH-48S6ID	9,926#
5'-0"	MH-60S6ID	11,711#
6'-0"	MH-72S6ID	13,496#

NOTES:

1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. REINFORCED STEEL CONFORMS TO LATEST ASTM A185 SPEC. 0.18 SQ. IN./LINEAL FT. AND 0.18 SQ. IN. (BOTH WAYS) BASE BOTTOM.
3. H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
4. BUTYL RESIN SECTION JOINT CONFORMS TO LATEST ASTM C990 SPECIFICATION.
5. STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO LATEST ASTM C478 SPEC.



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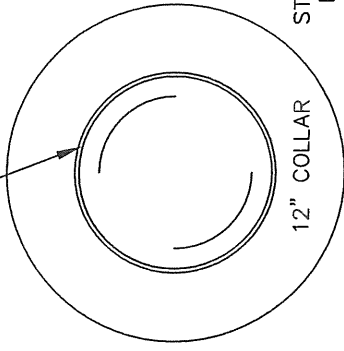
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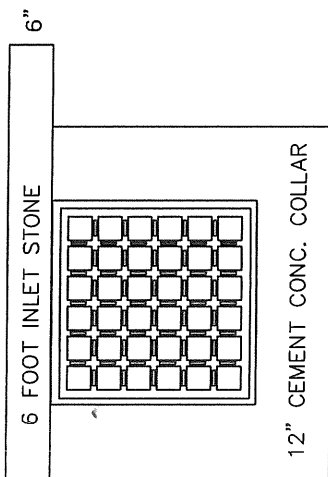
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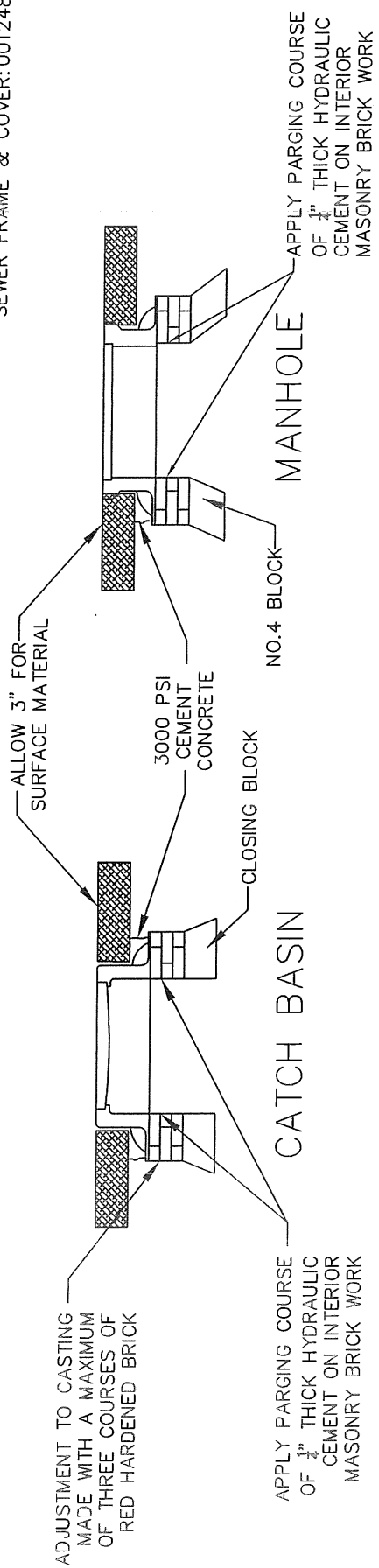
24" MANHOLE COVER WITH 32" FLANGE




STANDARD FRAME/RING COVER  
EAST JORDAN IRON WORKS  
MANHOLE FRAME: 00124611  
DRAIN FRAME & COVER: 00124826C02  
SEWER FRAME & COVER: 00124825C02



EAST JORDAN IRON WORKS 00554613  
3-FLANGE FOR CURBING  
INSTALLATION  
ALTERNATE GRATE: 00554611  
CASCADE GRATE: 00552050



CEMENT CONCRETE COLLARS  
FOR MANHOLES AND CATCH BASINS

	<p>FIGURE NAME: 222.010 - FRAMES, GRATES &amp; CONCRETE COLLARS DETAIL</p> <p>SCALE: NOT TO SCALE</p>
<p>REV. DATE: 3/30/2011</p>	<p>CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT STANDARD DETAILS</p>





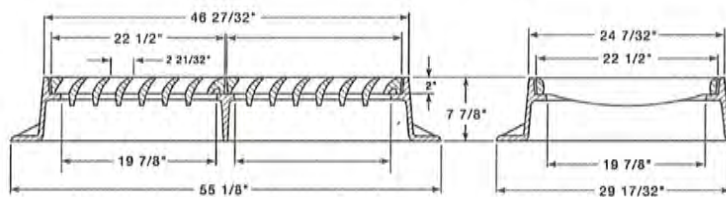


R-3287-5- Combination Inlet, without curb box

**R-3287-5**

Combination Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-5	V	3.2	11.3

2-1/2" adjusting ring available, see R-1979 series.

Catalog Number	A	B	C	E	F
R-3287-5	22-1/2 x 22-1/2	2	19-1/2 x 19-7/8	29-17/32 x 5529-1/8	7-7/8

All dimensions are listed in inches unless otherwise noted.

To order Neenah Foundry products, please call **800.558.5075**.

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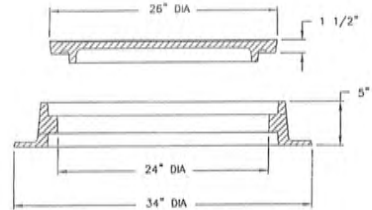


### 2450 FRAME & COVER



Heavy duty  
Machined bearing surfaces  
Reversible frame

- Options:  
Special lettered covers  
Custom logo covers  
Watertite assembly  
Grates  
Adjusting risers  
Hinged unit  
Gasket seal covers  
Accepts 1040 covers

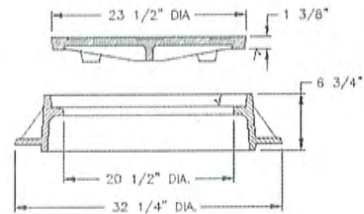


### V-2480 WATERTITE FRAME & COVER



Heavy duty  
Machined bearing surfaces  
Watertite assembly

- Options:  
Special lettered covers  
Custom logo covers  
Adjusting risers

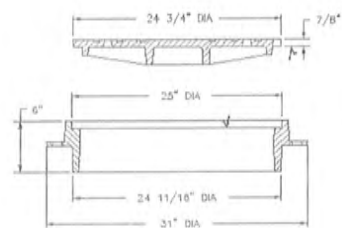


### 2600 FRAME & 2603 COVER

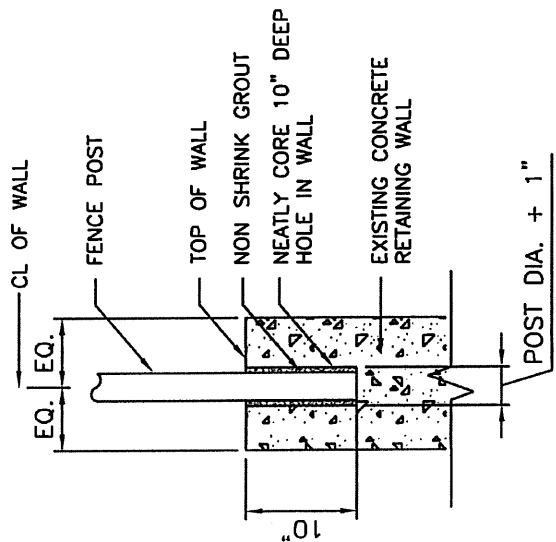


Heavy duty  
Machined bearing surfaces  
Uses 2603 covers and grates

- Options:  
Concave grate – 2603  
Bolted assembly





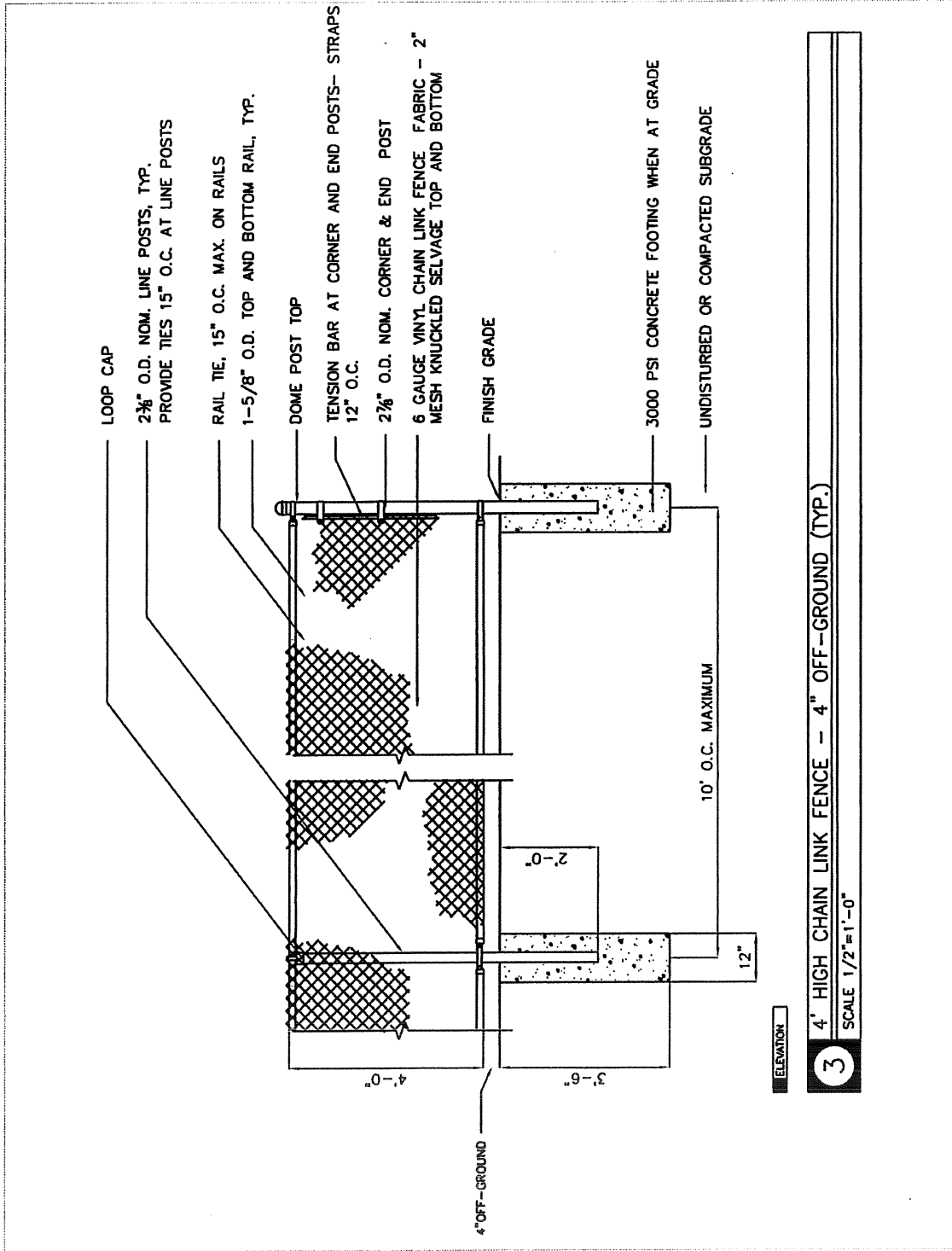


ELEVATION

4' HIGH CHAIN LINK FENCE POST SET IN CONC. RETAINING WALL (TYP.)

SCALE 1"=1'-0"

4

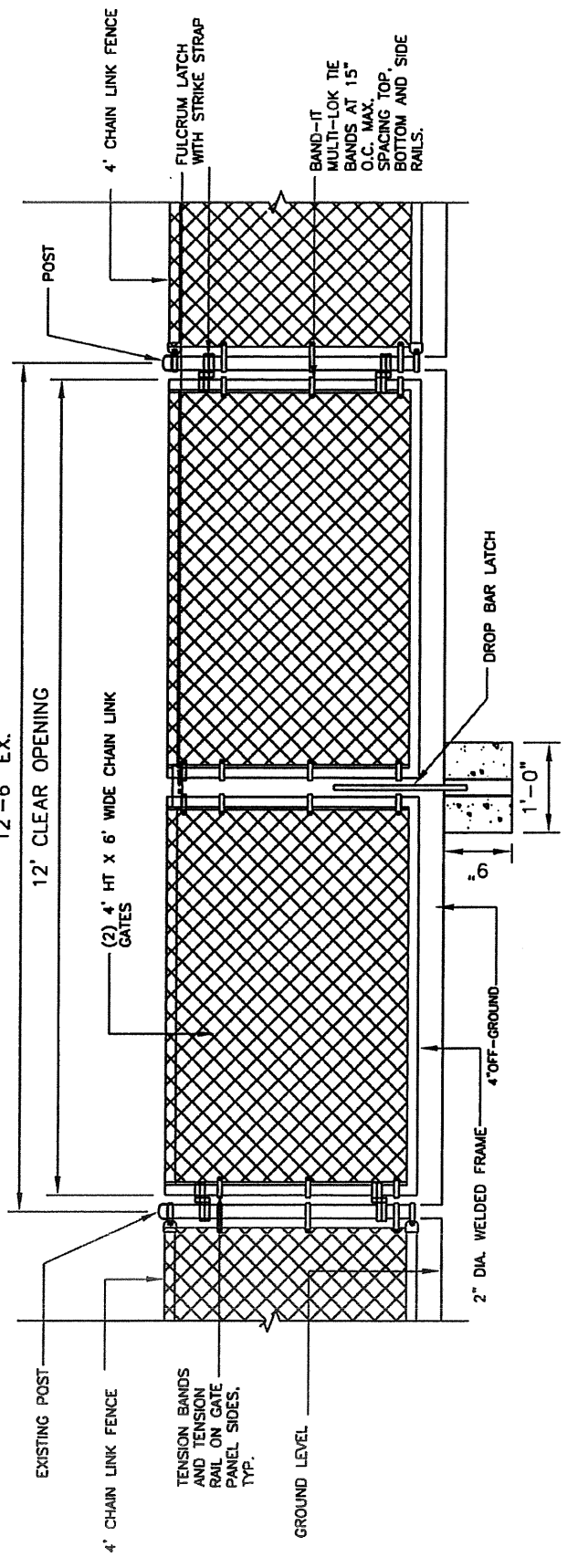


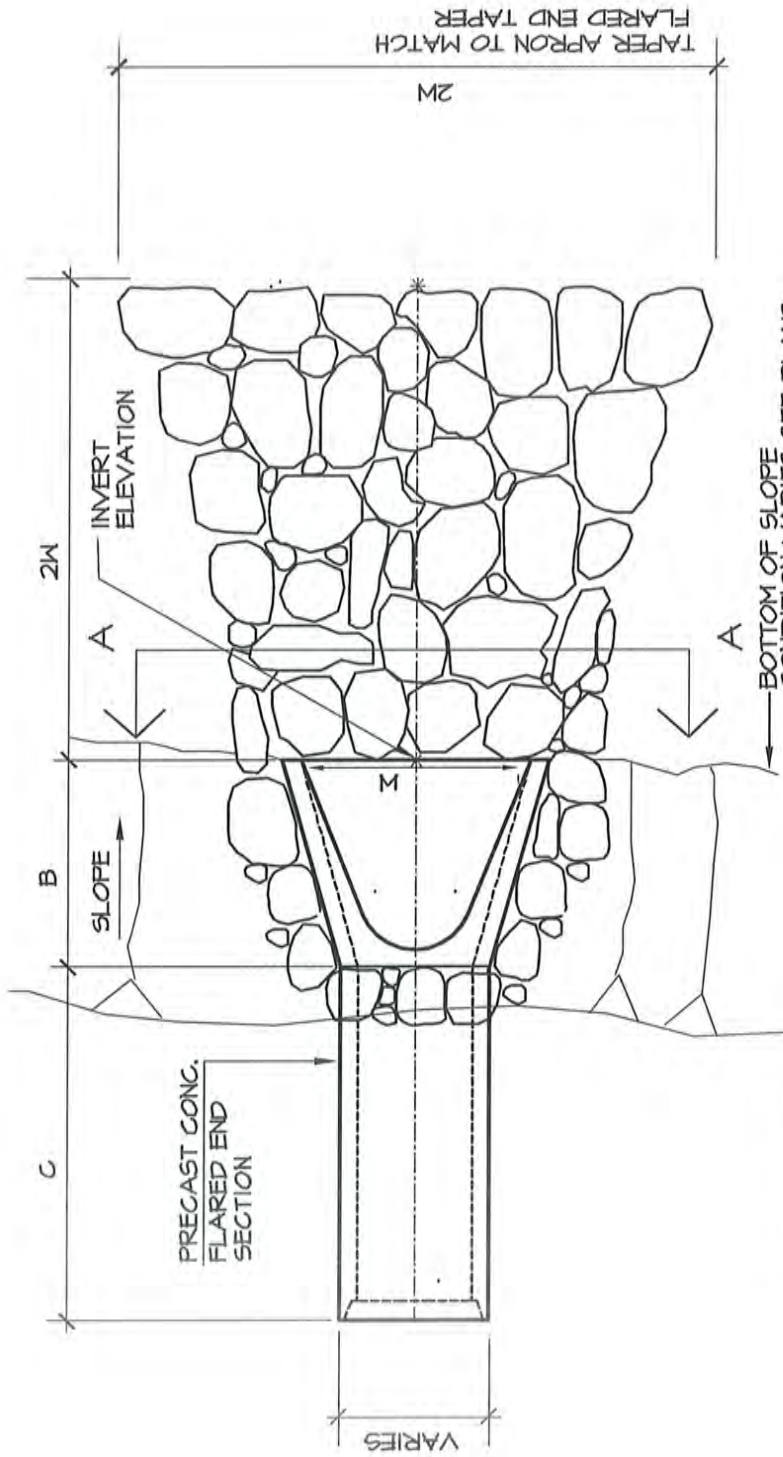
ELEVATION

3 4' HIGH CHAIN LINK FENCE — 4" OFF-GROUND (TYP.)

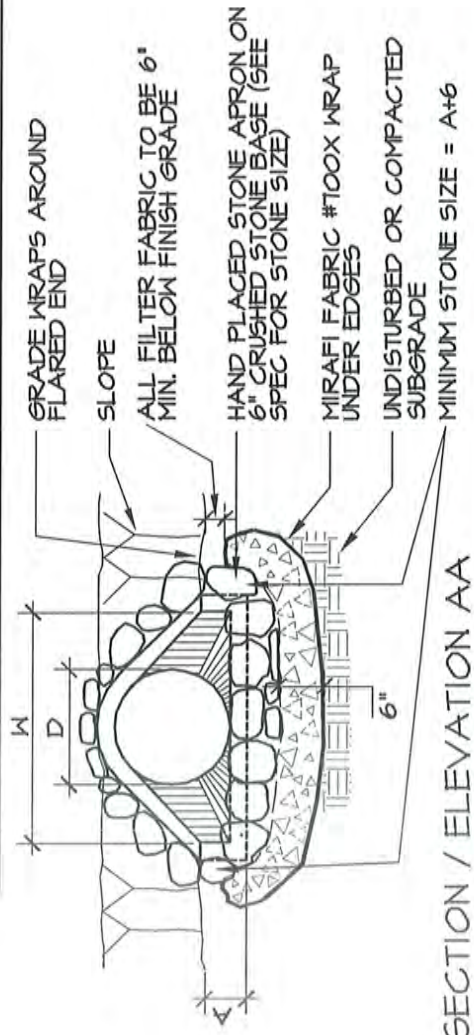
SCALE 1/2"=1'-0"

VERIFY OPENING DIMENSION IN FIELD PRIOR TO FABRICATION OF GATES.  
12'-6" EX.





PLAN VIEW



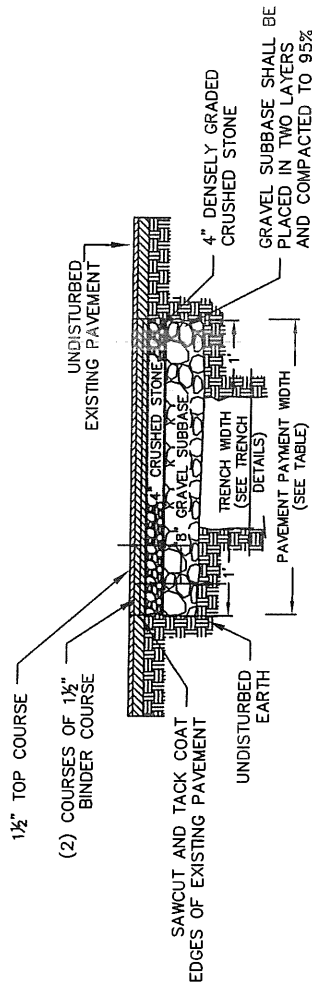
SECTION / ELEVATION AA

D	A	B	C	W
12"	4"	2'-0"	4'-1"	2'-0"
15"	6"	2'-3"	3'-10"	2'-6"
18"	9"	2'-3"	3'-10"	3'-0"
21"	9"	2'-11"	3'-2"	3'-6"
24"	15"	3'-7.5"	2'-6"	4'-0"
30"	12"	4'-6"	1'-8"	5'-0"
36"	15"	5'-3"	2'-11"	6'-0"
48"	24"	6'-0"	2'-2"	7'-0"

# FLARED END SECTION WITH STONE APRON

SCALE: 1/2" = 1'-0"





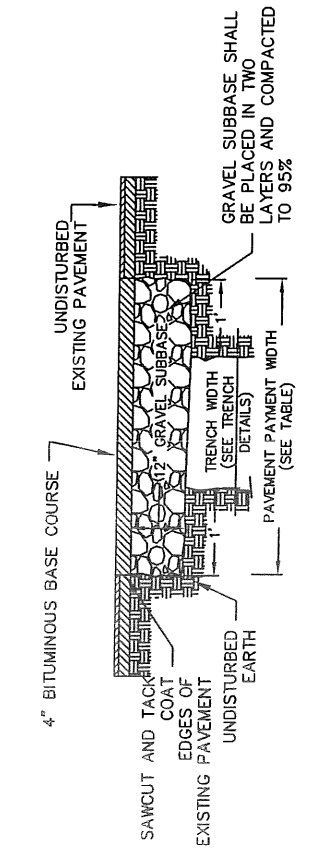
TRENCH PAY LIMIT TABLE FOR PERMANENT PAVEMENT

PIPE SIZE (I.D.)	DEPTH TO PIPE INVERT		PAY WIDTH
	OVER 8' - 12'	OVER 12' - 16'	
0" - 24"	8'-6"	14'-6"	17'-6"
OVER 24"	O.D. + 6'-0"	O.D. + 12'-0"	O.D. + 15'-0"

I.D. = INSIDE DIMENSION  
O.D. = OUTSIDE DIMENSION

FOR EACH ADDITIONAL 4'-0" OF PIPE INVERT DEPTH OVER 20', ADD 3'-0" TO WIDTH LIMITS

PERMANENT TRENCH PAVEMENT  
DETAIL



TRENCH PAY LIMIT TABLE FOR TEMPORARY PAVEMENT

PIPE SIZE (I.D.)	DEPTH TO PIPE INVERT		PAY WIDTH
	OVER 8' - 12'	OVER 12' - 16'	
0" - 24"	6'-6"	12'-6"	15'-6"
OVER 24"	O.D. + 4'-0"	O.D. + 10'-0"	O.D. + 13'-0"

I.D. = INSIDE DIMENSION  
O.D. = OUTSIDE DIMENSION

FOR EACH ADDITIONAL 4'-0" OF PIPE INVERT DEPTH OVER 20', ADD 3'-0" TO WIDTH LIMITS

TEMPORARY PAVEMENT DEPTH SHALL BE 3-IN.

TEMPORARY TRENCH PAVEMENT  
DETAIL

TEMPORARY AND PERMANENT TRENCH PAVEMENT NOTES:

1. PERMANENT TRENCH PAVEMENT PAYMENT WIDTH SHALL BE THE TRENCH PAY LIMIT PLUS 2 FEET
2. TEMPORARY TRENCH PAVEMENT PAYMENT WIDTH SHALL BE EQUAL TO THE TRENCH PAYMENT LIMIT
3. REMOVE AND DISPOSE ALL TEMPORARY PAVEMENT AS REQUIRED. RESTORE AND COMPACT SUBBASE AS REQUIRED PRIOR TO PERMANENT TRENCH PAVEMENT.
4. DEPTH OF PERMANENT TRENCH PAVEMENT SHALL BE THE SAME THICKNESS AS THE EXISTING PAVEMENT.

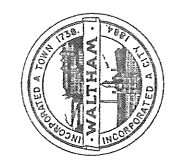


FIGURE NAME:

141.000.B - TRENCH PAVEMENT DETAILS

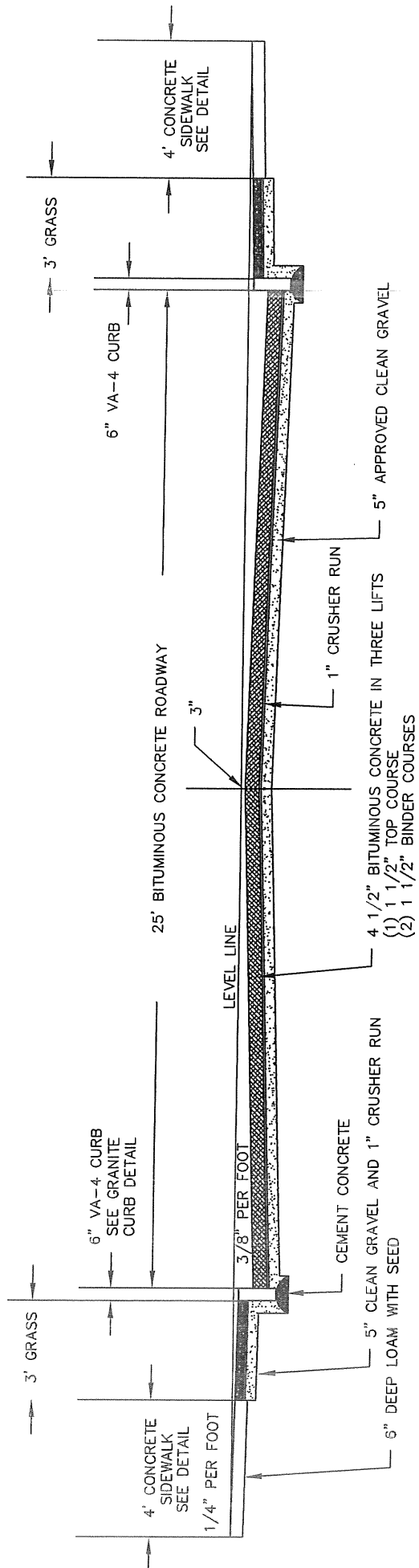
SCALE:

NOT TO SCALE

CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT  
STANDARD DETAILS

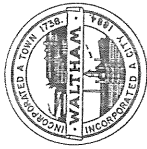
REV. DATE:

4/13/2011

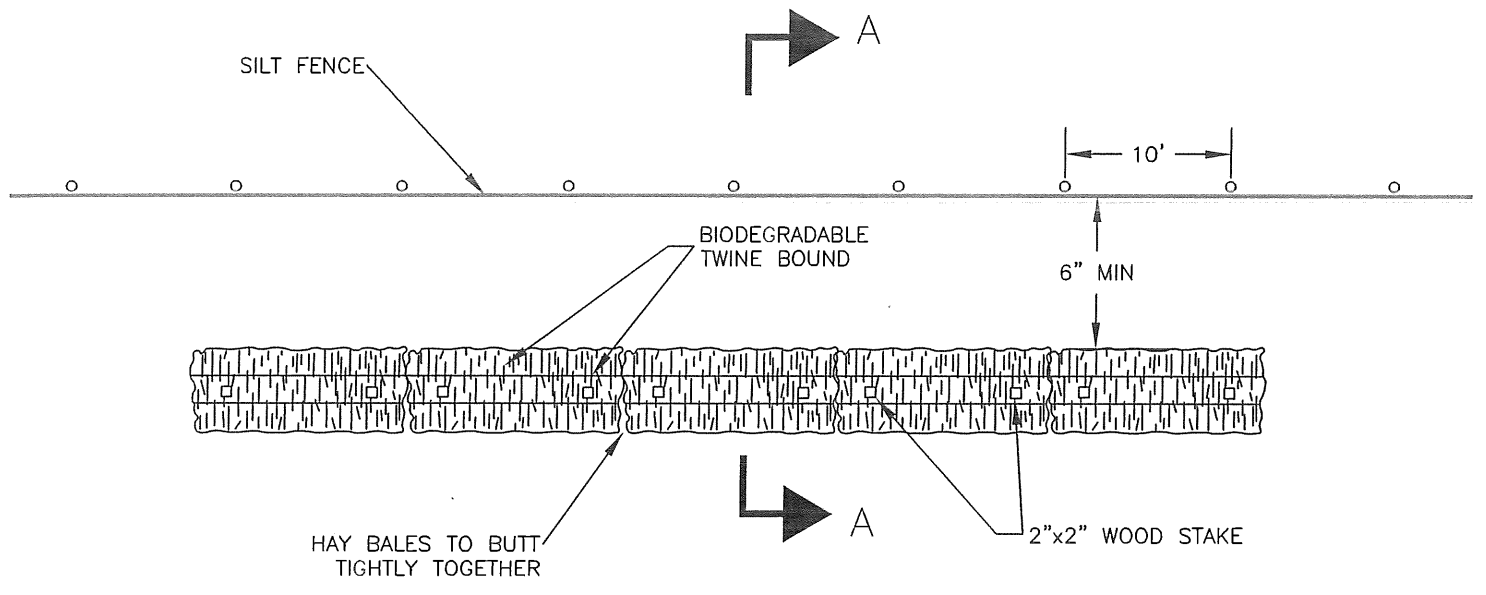


TYPICAL CROSS SECTION FOR 40 FOOT LAYOUT

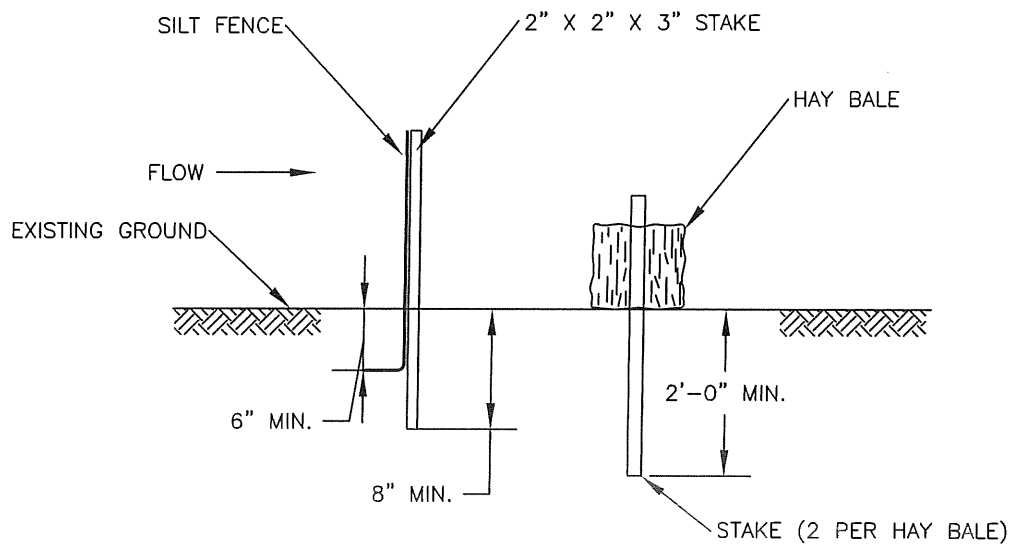
N.T.S.

	<p>FIGURE NAME: 460.000.A - TYPICAL 40-FOOT ROAD CROSS SECTION</p> <p>CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT STANDARD DETAILS</p>
<p>SCALE: NOT TO SCALE</p>	<p>REV. DATE: 4/13/2011</p>





EROSION BARRIER  
HAY BALES AND SILT FENCE PLAN



SECTION A-A

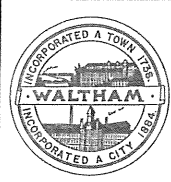


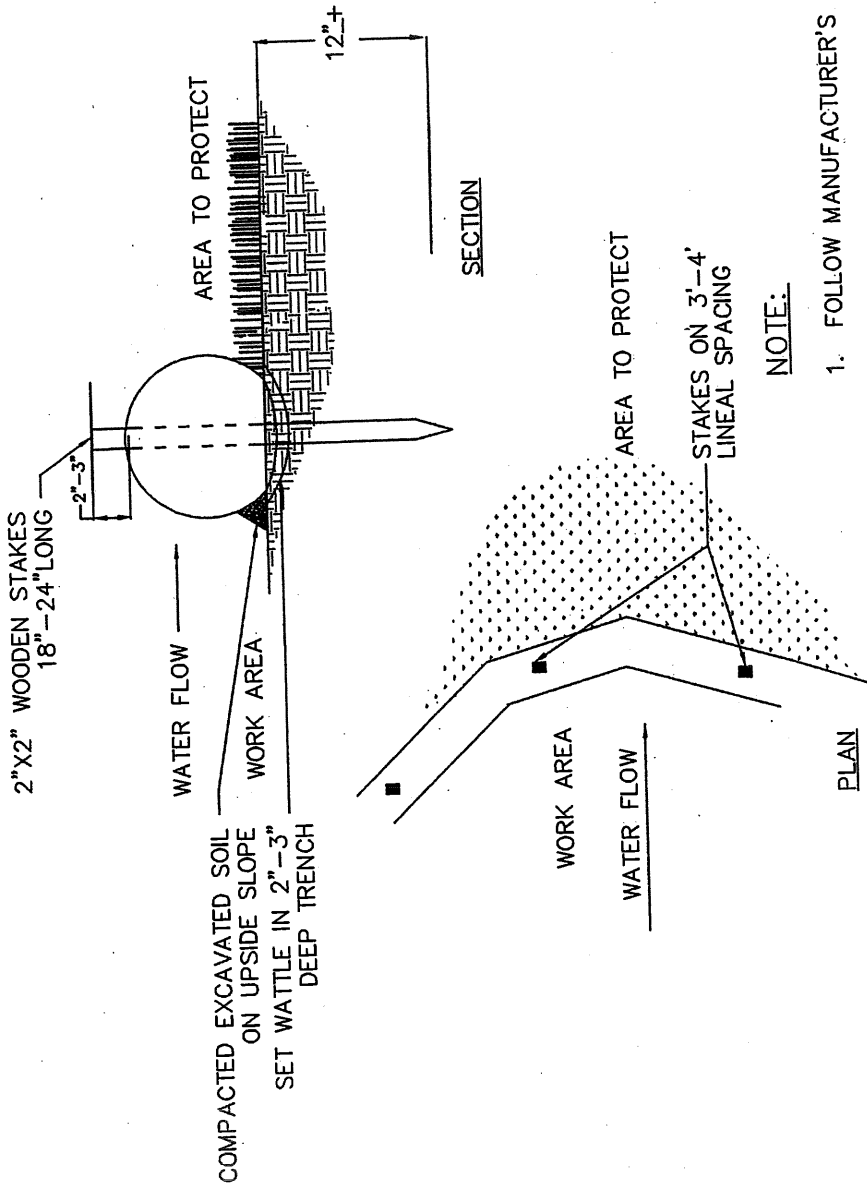
FIGURE NAME:  
199.000.A - HAY BALE FOR EROSION CONTROL

CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT  
STANDARD DETAILS

SCALE:  
NOT TO SCALE

REV. DATE:  
12/8/2010



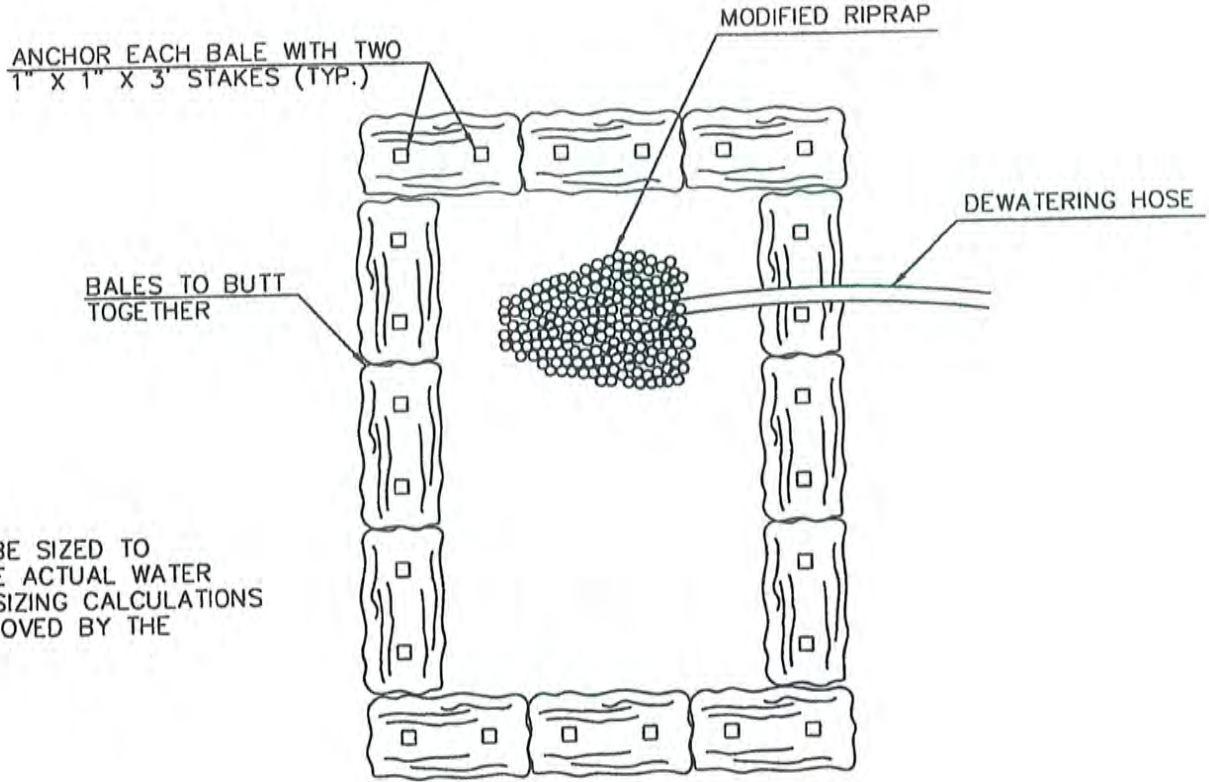


NOTE:

1. FOLLOW MANUFACTURER'S SPECIFICATIONS.

## STRAW WATTLE

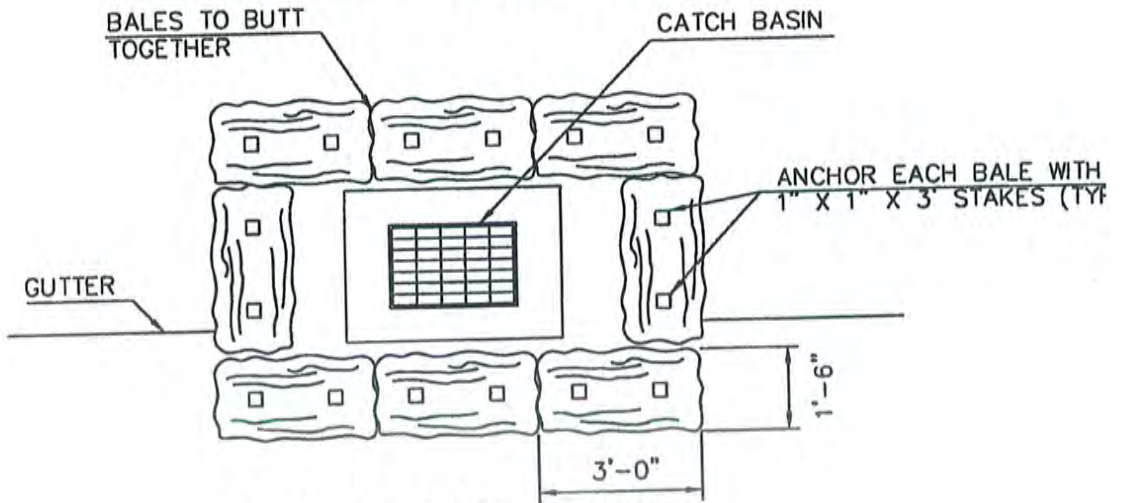
NOT TO SCALE



**NOTE:**

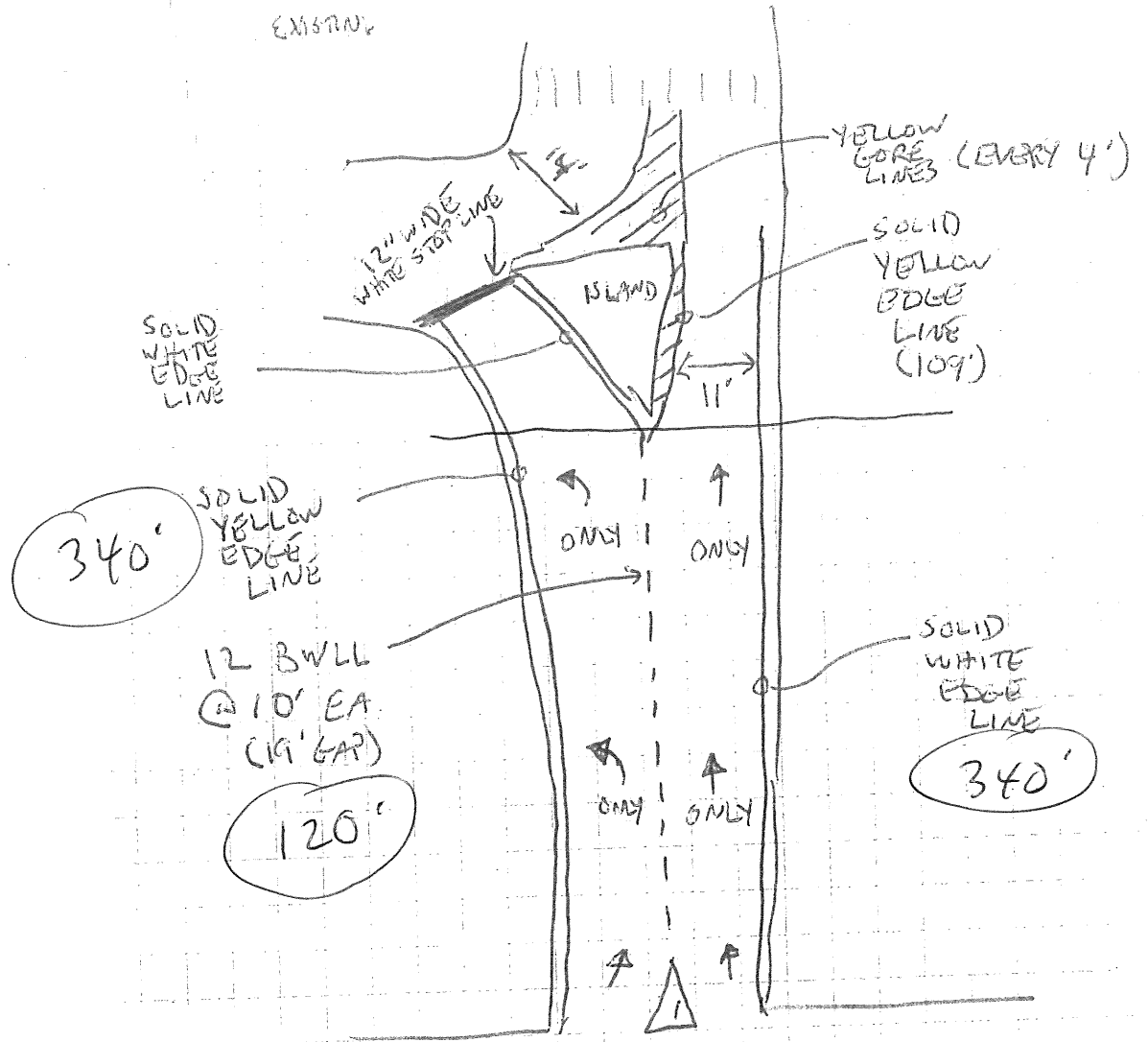
BASINS TO BE SIZED TO ACCOMODATE ACTUAL WATER VOLUMES. SIZING CALCULATIONS TO BE APPROVED BY THE ENGINEER.

**PLAN AT SEDIMENTATION BASIN**



**PLAN AT CATCH BASIN**

**TYPE "D" EROSION CHECK  
FOR CATCH BASINS  
OR SEDIMENTATION BASINS**



ARROWS/ONLYS = 230 SF

## **Appendices – A**

### **Conservation Order of Conditions**

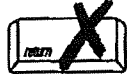


Massachusetts Department of Environmental Protection  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
 316-0655  
 MassDEP File #  
 eDEP Transaction #  
 Waltham  
 City/Town

**A. General Information**

**Important:**  
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. From: Waltham  
 Conservation Commission

2. This issuance is for (check one):  
 a.  Order of Conditions b.  Amended Order of Conditions

3. To: Applicant:

Stephen a. First Name Casazza b. Last Name

City of Waltham, Engineering c. Organization

119 Lexington Street d. Mailing Address

Waltham e. City/Town MA f. State 02452 g. Zip Code

4. Property Owner (if different from applicant):

City of Waltham a. First Name b. Last Name

610 Main Street c. Organization d. Mailing Address

Waltham e. City/Town MA f. State 02452 g. Zip Code

5. Project Location:

617-655 Lexington Street a. Street Address Waltham b. City/Town

R033 c. Assessors Map/Plat Number 3/1A d. Parcel/Lot Number

Latitude and Longitude, if known: 42d23m50ns d. Latitude 71d14m06ws e. Longitude



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**A. General Information (cont.)**

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):
- a. County \_\_\_\_\_ b. Certificate Number (if registered land) \_\_\_\_\_
- c. Book \_\_\_\_\_ d. Page \_\_\_\_\_
7. Dates: May 17, 2012 August 16, 2012 September 6, 2012  
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):  
See Attached
- a. Plan Title \_\_\_\_\_
- b. Prepared By \_\_\_\_\_ c. Signed and Stamped by \_\_\_\_\_
- d. Final Revision Date \_\_\_\_\_ e. Scale \_\_\_\_\_
- f. Additional Plan or Document Title \_\_\_\_\_ g. Date \_\_\_\_\_

**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act:
- Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:
- a.  Public Water Supply    b.  Land Containing Shellfish    c.  Prevention of Pollution  
 d.  Private Water Supply    e.  Fisheries    f.  Protection of Wildlife Habitat  
 g.  Groundwater Supply    h.  Storm Damage Prevention    i.  Flood Control
2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved subject to:**

- a.  the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.





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**B. Findings (cont.)**

Denied because:

- b.  the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c.  the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3.  Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) \_\_\_\_\_ a. linear feet

**Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)**

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	20 a. linear feet	20 b. linear feet	20 c. linear feet	20 d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	100 a. square feet _____ e. c/y dredged	100 b. square feet _____ f. c/y dredged	_____ c. square feet	_____ d. square feet
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet Cubic Feet Flood Storage _____ e. cubic feet	_____ b. square feet _____ f. cubic feet	_____ c. square feet _____ g. cubic feet	_____ d. square feet _____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet Cubic Feet Flood Storage _____ c. cubic feet	_____ b. square feet _____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	222,600 a. total sq. feet 1600 c. square feet 0 g. square feet	_____ b. total sq. feet _____ d. square feet _____ h. square feet	_____ e. square feet _____ i. square feet	_____ f. square feet _____ j. square feet



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**B. Findings (cont.)**

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	_____ a. square feet	_____ b. square feet	_____ cu yd c. nourishment	_____ cu yd d. nourishment
14. <input type="checkbox"/> Coastal Dunes	_____ a. square feet	_____ b. square feet	_____ cu yd c. nourishment	_____ cu yd d. nourishment
15. <input type="checkbox"/> Coastal Banks	_____ a. linear feet	_____ b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	_____ a. square feet	_____ b. square feet		
17. <input type="checkbox"/> Salt Marshes	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	_____ a. c/y dredged	_____ b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____ a. square feet	_____ b. square feet		





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**B. Findings (cont.)**

\* #22. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

22.  Restoration/Enhancement \*:  
 \_\_\_\_\_  
 a. square feet of BVW \_\_\_\_\_ b. square feet of salt marsh \_\_\_\_\_
23.  Stream Crossing(s):  
 \_\_\_\_\_  
 a. number of new stream crossings \_\_\_\_\_ b. number of replacement stream crossings \_\_\_\_\_

**C. General Conditions Under Massachusetts Wetlands Protection Act**

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. the work is a maintenance dredging project as provided for in the Act; or
  - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on \_\_\_\_\_ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.





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**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,  
"Massachusetts Department of Environmental Protection" [or, "MassDEP"]  
"File Number            316-0655 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.





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**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

**NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS**

19. The work associated with this Order (the "Project") is (1)  is not (2)  subject to the Massachusetts Stormwater Standards. If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.

b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:

- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
- ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
- iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;
- iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
- v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.



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### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.

\*





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**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**See Attached**

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Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
316-0655  
MassDEP File #  
eDEP Transaction #  
Waltham  
City/Town

**D. Findings Under Municipal Wetlands Bylaw or Ordinance**

1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No

2. The Conservation Commission hereby finds (check one that applies):

a.  that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

b.  that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

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Massachusetts Department of Environmental Protection  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
 316-0655  
 MassDEP File #

eDEP Transaction #  
 Waltham  
 City/Town

**E. Signatures**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

9/6/12  
 1. Date of Issuance

Please indicate the number of members who will sign this form.

5  
 2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

by hand delivery on  
 9-11-12

by certified mail, return receipt requested, on

Date

Date

**F. Appeals**

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

316-0655

MassDEP File #

eDEP Transaction #

Waltham

City/Town

**G. Recording Information**

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

City of Waltham Conservation Commission

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

City of Waltham Conservation Commission

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

316-0655

MassDEP File Number

Has been recorded at the Registry of Deeds of:

Middlesex

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant





**Waltham Conservation Commission  
119 School Street  
Waltham, MA 02452**

**SPECIAL ORDERS OF CONDITIONS (V2010)  
AS ISSUED BY THE WALTHAM CONSERVATION COMMISSION**

**DEP File Number: 316-655**

**Applicant: Stephen Casazza, City of Waltham Recreation Department**

**Location: 617 – 655 Lexington Street**

**Date of Issuance: September 6, 2012**

**20. RECORDING AND ADMINISTRATION**

- A. Prior to any work on the site, or within six (6) weeks of the date of this Order, whichever comes first, this Order of Conditions shall be recorded at the Middlesex Registry of Deeds or Land Court and notice filed with the Commission pursuant to Condition 8. Failure to do so shall be deemed cause to revoke this Order.
- B. In advance of any work on this project the applicant shall notify the Commission, and at the request of the Commission, shall arrange an on-site conference among the Commission, the contractor and the applicant to ensure that all of the conditions of this Order are understood.
- C. This Order shall be made a part of all contracts and subcontracts dealing with the work proposed, and shall supersede all other conflicting contract requirements.
- D. This Order shall apply to and be binding upon the applicant, its employees and all successors and assigns in interest or control.
- E. Prior to any work being done on the project site, the applicant shall inform the Waltham Conservation Commission in writing of the names, addresses, business and home phone numbers of both the project supervisor who will be responsible for ensuring on-site compliance with this order and his/her alternate. The applicant shall also notify the Commission in writing of any changes in this information.
- F. Members of the Commission or their agents shall have the right to enter upon and inspect the premises to evaluate compliance with this Order of Conditions.
- G. Any changes differing from the aforementioned conditions must be submitted to the Commission for approval prior to their implementation. If the Commission finds, by majority vote, said changes to be significant and/or deviate from the original plans, Notice of Intent, or the Order of Conditions, then the Commission may require a new

Notice of Intent or call for another public hearing within 21 days, at the expense of the applicant, in order to take testimony from all interested parties. Within 21 days of the close of said public hearing, the Commission will issue an amended or new Order of Conditions.

H. Any errors found in the plans or information submitted by the applicant shall be considered as changes, and the procedures outlined in Condition "G" above shall be followed.

I. In conjunction with the sale of any portion of the site covered by this Order of Conditions, the applicant shall submit to the Commission a signed statement by the buyer that he/she is aware of outstanding Orders of Conditions.

J. The Commission may authorize its designated agent to act on its behalf in determining preconstruction compliance.

K. Special Conditions 22B, 23G, 24A, 24B, 24C, 24D, and 24E shall apply in perpetuity and shall not expire with the issuance of a Certificate of Compliance for this project.

## **21. PRIOR TO COMMENCEMENT OF WORK**

A. Prior to any work on the project site, the proposed limit of work shall be clearly marked with stakes, flags or fencing and shall be approved in writing by the Commission. Such markers will be maintained until all construction on the site's perimeter is complete. All workers shall be informed that no construction activity is to occur beyond this line at any time.

B. Prior to any work on the project site, all trees greater than six (6) inches in diameter that are to be saved shall be protected from inadvertent damage by strapping boards around the trunk from ground level to a height of at least eight (8) feet. Completion of this project measure shall be approved in writing by the Commission. Such measures shall be maintained until all earthwork and grading is complete and then shall be removed. Trees that are not to be saved shall be cut and stumps removed.

C. Prior to any construction on the site, an erosion control barrier of a filter fabric fence backed by a row of double-staked hay bales shall be placed between all construction activities and wetland areas, in accordance with Erosion and Sedimentation Guidelines for Urban and Suburban Areas, Mass. DEP, March 1997. This barrier shall be inspected and approved in writing by the Commission. Upon completion of the project the applicant shall remove and discard to a suitable area, all hay bales and other materials determined to be detrimental to the resource areas.

D. The applicant shall have on hand at the start of any soil disturbance, removal or stockpiling, a minimum of 20% additional hay bales, or otherwise stated, in good condition and sufficient stakes for double staking these bales. Said bales shall be used only for the control of emergency erosion problems and shall not be used for the normal control of erosion, as described in Condition "C".

## **22. LIMITS OF WORK/EROSION CONTROL**

A. There shall be no activity (i.e. filling, alteration, regrading, removal of vegetation, etc.) related to this project within 50 feet of any resource area unless otherwise described in these orders and on the referenced plans.

B. As soon as possible during construction, all disturbed upland areas in the resource area or buffer zone shall be brought to final finished grade and stabilized permanently against erosion. This shall be done either by sodding, or by loaming, seeding, and mulching according to Natural Resources Conservation Service (formerly UDA) Soil Conservation Service Guidelines. If the latter course is chosen, stabilization will be considered completed once the surface shows complete vegetative cover. Bare ground that can not be permanently stabilized within thirty (30) days shall be stabilized by temporary measures.

## **23. DURING WORK**

A. Accepted engineering and construction standards and procedures shall be followed in the completion of this project.

B. A copy of this Order of Conditions, as well as all construction and wetland replication plans, shall be on site upon commencement of any site work and made available to any person doing work on the site.

C. Site grading and construction shall be scheduled to avoid periods of high water. Once begun, grading and construction shall move uninterrupted to completion to avoid erosion and sedimentation of wetlands.

D. Any dewatering or drawdown activities on the project in which water will be released into a resource area or storm drain shall make use of a sedimentation tank or similar device to remove sediment before the water is released.

E. No earthen embankment in the buffer zone shall have a post construction slope steeper than 2:1.

F. There shall be no stockpiling of soil or other materials within fifty (50) feet of any resource area, except as described in the NOI and shown on the referenced plan.

G. During and after work on this project, there shall be no discharge or spillage of fuel, oil, or other pollutants into any resource area or buffer zone. The applicant shall take all reasonable precautions to prevent the release of pollutants by ignorance, accident, or vandalism.

## **24. UPON COMPLETION OF WORK**

### **A. Storage of Petroleum Products**

- i. No underground storage of fuel oils shall be allowed within the resource area or buffer zone.
- ii. There shall be no storage of petroleum products (e.g. motor oil, gasoline, diesel fuel, etc.) within the resource area or buffer zone on the site at any time, except for quantities commensurate with maintaining a single family home.

### **B. Fertilizer, Pesticides and Herbicides**

- i. Fertilizers shall not be used within a resource area or fifty (50) feet from a resource area.
- ii. Pesticides and herbicides shall not be used with a resource area or buffer zone.

C. Sodium chloride shall not be used for de-icing on the site. Signs of a minimum of two square feet stating such restriction shall be posted at all vehicle entrances.

D. Sand used in deicing shall be removed periodically during the winter and by May 1<sup>st</sup> of each year. Records of cleaning shall be maintained on site and mailed annually to the Commission by May 1<sup>st</sup>.

E. The storm drainage system shall be equipped with gas and oil traps. Catch basins shall be cleaned and maintained by the applicant every 3 months. Records of said cleaning shall be maintained on site and mailed annually to the Commission by May 1st.

## **25. SITE SPECIFIC CONDITIONS**

- A. Applicant or landowner must provide passage for wildlife by:
  - a. Providing at least a four-inch gap between the ground and the bottom of the fence; or
  - b. Providing vertical gaps of at least 4 inches no less than every 50 feet. Leaving Lexington Street with no fence will necessarily comply with the above requirements for that section of the perimeter.
- B. Applicant or landowner shall install a gate at each end of the property, within close proximity and on the same side of the brook, adequate to allow access at both ends. There is no requirement as part of these conditions that the gates be accessible to the public. However, the gates are required so that the school committee may, at its discretion, readily allow people, including perhaps the general public, access to the enclosed area.
- C. The project must not increase peak flows downstream. In the event that it does, the Commission has the authority to order the removal of the project.
- D. The project may not adversely affect the health of the wetlands to a significant extent. In the event that it does, the Commission has the authority to order the removal of the project. The Commission will document the current condition of the wetlands with photographs and will obtain additional photographs from Eric Rizzo so that any deterioration may be assessed in the future.

- E. Straw waddles are required
- F. Neither the applicant nor the landowner or anyone else may push snow toward the wetlands or dump snow on the fence side. Regular plowing that pushes snow sideways toward the fence will not be deemed a violation of this condition.

**Appendices – B**  
**Soil Boring Information**







Client Name	New Hampshire Boring, Inc. 1215 W. Chestnut Street Brockton, MA	Sheet 1 of 1	Boring No.	B-1
City of Waltham		02301	NHB JOB NUMBER: 113071	
City/Town: Waltham, MA	PROJECT NAME: Flood Mitigation Design			
Location: Kennedy Middle School-655 Lexington Street	Date & Time Started	Date & Time Completed	Total Hours Worked	
Groundwater Depth (Feet): 7' Date & Time:	2/21/2013	2/21/2013		
DRILLER: Donald Palmer	HELPER: William Walsh			
Ground Elevation:	Inspector's Name (Print):	Inspector's Company:		

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches				Recovery (Inches)	Field Description	Strata Changes
		0-6	6-12	12-18	18-24			
S-1	0-2	1	3	12	6	2	Moist, medium dense, brown, FINE SAND	
S-2	4-6	119	14	10	23	3	Moist, medium dense, brown, WOOD PIECES, trace gravel	
							Boulders 9' - 10'	9'
S-3	10-12	11	34	65	71	9	Wet, very dense, brown/gray, COARSE GRAVEL, some fine sand, trace inorganic silt Possible BEDROCK @ 12'6" roller bit to 14'	12'6"
C-1	14-15					5 min	Gray, SCHIST, slightly fractured, competent	
	15-16					5 min		
	16-17					5 min		
	17-18					6 min		
	18-19					6 min		
<b>BOE 19'</b>								

Remarks: 10'5" North of guard rail; 16'2" East of Front Wall

AUGER SIZE:  
CASING SIZE:  
SPLIT SPOON SIZE:  
DRILL RIG TYPE:

Penetration Resistance (N) Guide			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N = Sum of Second and Third 6" Blow Counts  
Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less



Client Name	New Hampshire Boring, Inc. 1215 W. Chestnut Street Brockton, MA	Sheet 1 of 1	Boring No. B-2
City of Waltham	MA	02301	NHB JOB NUMBER: 113071
City/Town: Waltham, MA	PROJECT NAME: Flood Mitigation Design		
Location: Kennedy Middle School-655 Lexington Street	Date & Time Started	Date & Time Completed	Total Hours Worked
Groundwater Depth (Feet): 6' Date & Time: 2/22/13	2/22/2013	2/22/2013	
DRILLER: Donald Palmer	HELPER: Manley Thompson		
Ground Elevation:	Inspector's Name (Print):	Inspector's Company:	

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches				Recovery (inches)	Field Description	Strata Changes
		0-6	6-12	12-18	18-24			
S-1	0-2	1	4	14	7	8	Dry, medium dense, brown, ORGANIC SILT, some fine sand, trace wood (TOP SOIL)	
S-2	4-6	34	19	17	16	3	Wet, dense, brown, COBBLES, trace fine sand and inorganic silt WEATHERED BEDROCK 7' - 8'	7'
C-1	10-11					6 min	Gray, SCHIST, slightly fractured, competent	
	11-12					6min		
	12-13					6 min		
	13-14					6 min		
	14-15					6 min		
<b>BOE 15'</b>								

Remarks: \_\_\_\_\_

AUGER SIZE:  
CASING SIZE: 4"  
SPLIT SPOON SIZE: 2"  
DRILL RIG TYPE: D-50

Penetration Resistance (N) Guide		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N = Sum of Second and Third 6" Blow Counts      Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

**Appendices – C**

**Site GIS Map  
Civil Site Plan – C1**

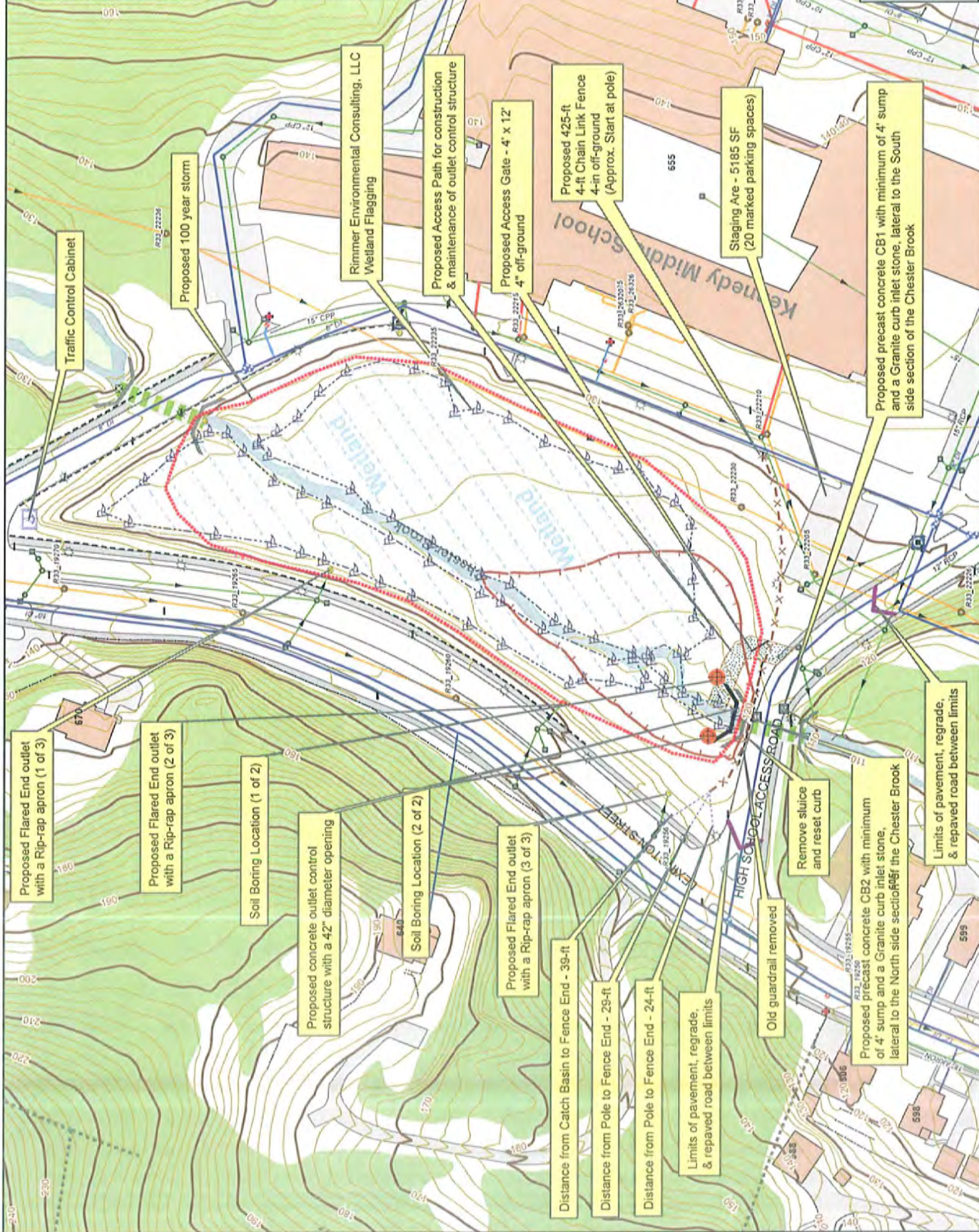


**Legend**

Block	Stream	Water Quality Indicator
Catch Basin Lateral	Fence	Unknown
Gravel	Guardrail	Unexcavated
Retaining Wall	Retaining Wall	Water Quality Indicator
Stone Wall	Stone Wall	
Wall	Wall	
Leaching Gallery	Water Cistern	
Level Spreader	Deposition Collector	
Open Ditch	Intermittent Collector	
Roof Drain	Building Footprint	
Flare End Chamber	Uplift	
Pump Station	Water Box	
Regulator	Water Box	
Sewer Manhole	Storm	
Valve (V)	Spreader	
Force Main	Underground Drain	
Gravel Man	Water Quality	
Service		
Stormwater		
Treatment		
Unknown		
Water Quality Indicator		

North To Scale

# Kennedy Middle School Flood Control



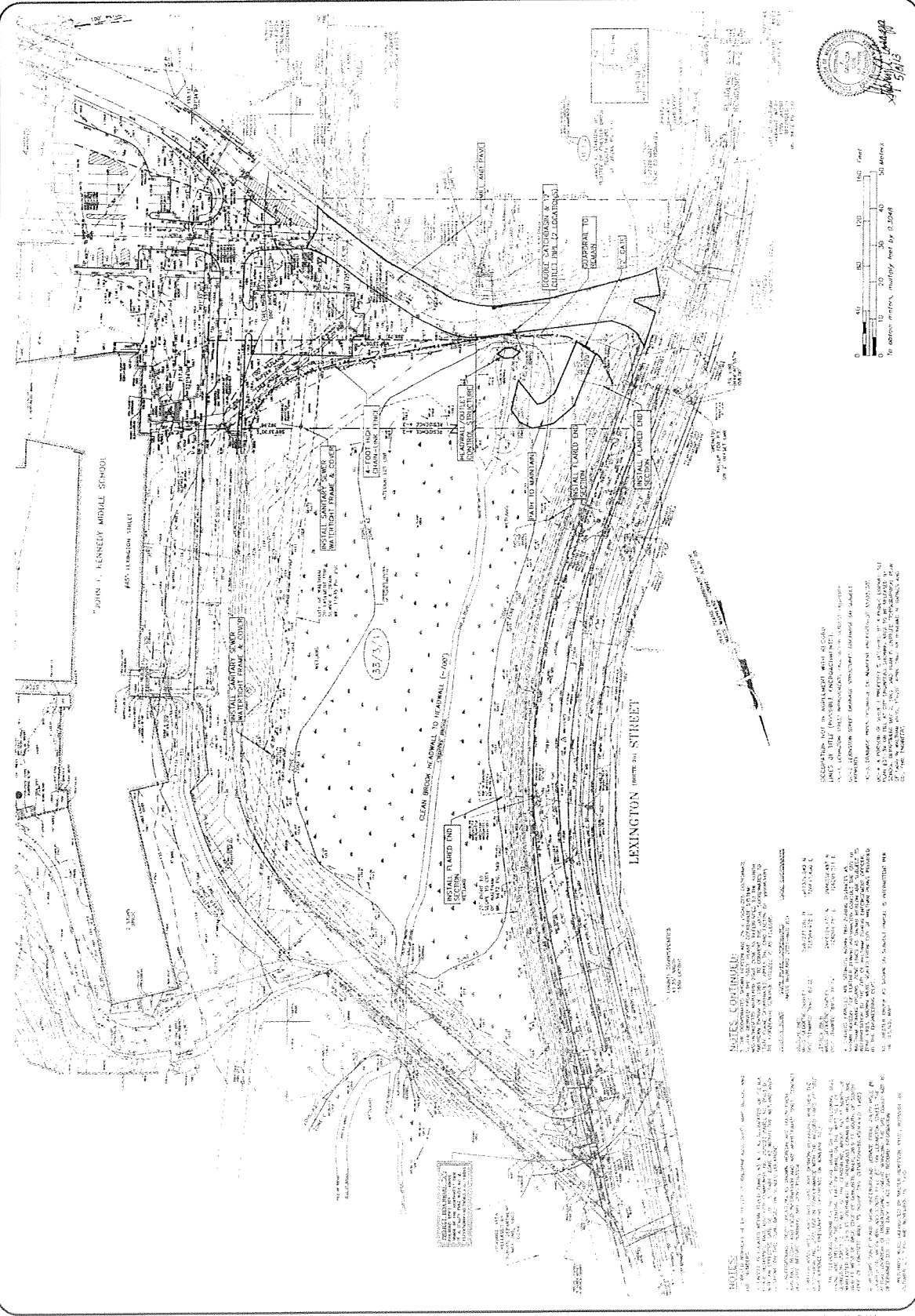
	Date	
No.	Necessity/Plan	Date

**ENGINEERING DEPARTMENT**  
MASSACHUSETTS

**KENNEDY MIDDLE SCHOOL**  
FLOOR CONTROL

**CIVIL SITE PLAN**

Sheet	Date
C-1	MAY 2013
Scale	1" = 40'



**NOTES:**

1. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
2. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.
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**NOTES - CONTINUED:**

11. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.
12. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.
13. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.
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19. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.
20. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.



