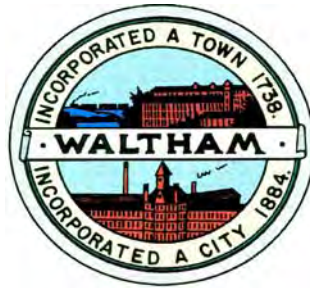


*Mayor Jeannette McCarthy  
Through  
The City of Waltham's  
Chief Procurement Officer*

*Joseph P. Pedulla*



*Ronald G. Vokey, Planning Director  
Sandi Tomasello, Director of Park and Recreation*

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

**FITCH SPRAY PARK CONSTRUCTION**

***The bid opening will be held: 10:00 am EST, Wednesday June 15, 2011***

***A Pre Bid Briefing will be held Wednesday June 8, 2011 at 8:30 am located at 14  
Ash street Waltham***

CITY OF WALTHAM, MASSACHUSETTS  
PLANNING DEPARTMENT

**SECTION 00020**

**INVITATION TO BID**

FOR

**FITCH SPRAY PARK CONSTRUCTION**  
IN  
WALTHAM, MASSACHUSETTS

SEALED BIDS for **FITCH SPRAY PARK CONSTRUCTION** LOCATED 14 ASH STREET will be received by Joseph Pedulla, Chief Procurement Officer at City Hall, Waltham, Mass. until **10:00 am EST, Wednesday June 15, 2011** at which time they will be publicly opened and read.

A **pre-bid meeting** will be held at the site **8:30 am EST on Wednesday June 8, 2011**. Attendance is not required but is strongly recommended.

**Questions will be received by e-mail** only at [www.jpedulla@city.waltham.ma.us](mailto:www.jpedulla@city.waltham.ma.us) until June 10, 2011.

*BIDS shall be received only on the separate bid forms provided, properly filled out and placed in a sealed envelope addressed to the Chief Procurement Officer, Waltham, Massachusetts, and endorsed "BID FOR FITCH SPRAY PARK CONSTRUCTION" along with the bidder's name.*

No Bid will be received unless accompanied by cash, a certified check, a treasurer's or cashier's check issued by a responsible bank or trust company, or a bid bond for the sum of five percent (5%) of the contractor's bid price in favor of the City of Waltham. If the Bidder selected for any such work fails to execute the Contract within five days, Sundays and holidays excluded, after presentation by the awarding authority, an award shall be made to the next lowest responsible and eligible bidder thereon. Should any bidder on any such proposed work to whom an award is made fail to execute a contract within five days, Sundays and holidays excluded, after presentation thereof, the amount so received as a bid deposit from such bidder through his cash or certified check, treasurer's check or cashier's check issued by a responsible bank or trust company, or bid bond shall become and be the property of the said City of Waltham as liquidated damages; provided, that in the case of death, disability or other unforeseen circumstances affecting the bidder, such bid deposit may be returned to him.

The right is reserved by the City of Waltham to reject any or all bids as may be deemed best for the interests of the City and the City of Waltham reserves the right to waive any informalities in the bidding.

The successful bidder will be required to furnish a performance bond and labor and materials payment bond of an approved surety company in an amount not less than the full amount of the Contract.

Plans, specifications, and blank Bid forms may be obtained by e-mailing the chief procurement Officer at [jpedulla@city.waltham.ma.us](mailto:jpedulla@city.waltham.ma.us) on the Purchasing Department, Waltham City Hall, or by visiting the City's web Site at [www.City.waltham.ma.us/purchasing/index](http://www.City.waltham.ma.us/purchasing/index).

The successful bidder will be required to furnish a Certificate of Insurance, naming the City as Additional Insured, for General Liability and Vehicle Liability in the amount of \$500,000 per occurrence and \$1,000,000 in the aggregate and Worker's Compensation Insurance as prescribed by law.

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.

Attention is called to the fact that minimum wage rates are established for the project as set forth in the Contract documents.

The City of Waltham Supplemental Equal Employment Opportunity, Anti-discrimination and Affirmative Action Program, including special provisions for participation by minority and women business enterprises, apply to this invitation to bid. **The bidder's certification form, attachment A, must be signed by all bidders and submitted with their bids.**

All bidders are hereby notified that the City of Waltham and the Federal Affirmative action requirements portion of these documents must be filled out prior to the award of the contract. They will be found in section 4 of these documents.

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

**Funding for this project may be subject to municipal appropriation.**

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.

**These specifications include a complete set of bid forms which are for the convenience of the bidder and are not to be filled out, executed, or detached from these specifications. Separate copies of the bid forms are furnished for submitting bids.**

City of Waltham  
Joseph P. Pedulla, Chief Procurement Officer

**SECTION 00100**  
**INSTRUCTIONS TO BIDDERS**

**PART 1- GENERAL:**

## 1.01 THE WORK

**FITCH SPRAY PARK RECONSTRUCTION**

## 1.02 SECURING DOCUMENTS

Additional copies of the proposed Contract Documents may be obtained from:

Joseph Pedulla  
City of Waltham  
Purchasing Department  
City Hall, 610 Main Street  
Waltham, MA 02452

## 1.03 BID FORM

In order to receive consideration, make bids in strict accordance with the following.

- A. Make bids upon the forms provided therefore, properly signed and with all items filled out. Do not change the wording of the bid form, and do not add words to the bid form. Unauthorized conditions, limitation, or provisions attached to the bid will be cause for rejection of the bid. If alterations by erasure or interlineations are made for any reason, explain over such erasure or interlineations with a signed statement from the bidder.
- B. No telegraphic bid or telegraphic modification of a bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the bidder unopened.
- C. Address bids to the City of Waltham, and deliver to the address given in the Invitation to Bid on or before the day and hour set for opening the bids. Enclose each bid in a sealed envelope bearing the title of the Work, the name of the bidder, and the date and hour of the bid opening. Submit only the original signed copy of the bid. It is the sole responsibility of the bidder to insure that his bid is received on time.

## 1.04 BONDS

- A. Prior to signing the Contract, the City of Waltham will require the successful bidder to secure and post a Labor and Materials Payment Bond and a Performance Bond, each in the amount of 100% of the Contract Sum, and each on the form provided therefore in the Project Manual. Such bonds shall be issued by a Surety acceptable to the City of Waltham. Costs of such bonds will be added to the agreed Contract Sum.
- B. The City of Waltham may require the Contractor to execute a lien bond in order to discharge liens initiated by a subcontractor in the event that a subcontractor institutes such a lien.

## 1.05 EXAMINATION OF DOCUMENTS AND SITE WORK

Before submitting a bid, each bidder shall examine the Drawings carefully, shall read the Specifications and all other proposed Contract Documents, and shall visit the site of the Work. Note that the drawings may not reflect the true existing topographic conditions in some cases due to work performed subsequent to the topographic survey. Each bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the Work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the Work as set forth in the proposed Contract Documents. The contractor shall be responsible for locating all site items such as utilities which could be affected by Work prior to the start of construction. No allowance will be made to a bidder because of the lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

#### 1.06 INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

- A. If any person contemplating submitting a bid for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in, or omissions from, any part of the proposed Contract Documents, he may submit to the Landscape Architect a written request for interpretation thereof no later than seven days before bids will be opened. The person submitting the request shall be responsible for its prompt delivery.
- B. Interpretation or correction of proposed Contract Documents will be made only by Addendum and will be mailed or delivered to each general contract bidder of record. The City of Waltham will not be responsible for any other explanations or interpretations of the proposed Contract Documents.

#### 1.07 PROOF OF COMPETENCY

- A. A bidder will be required to furnish evidence satisfactory to the City of Waltham that he/she and his/her proposed subcontractors have sufficient means and experience in the types of work called for to assure completion of the Contract in a satisfactory manner, and will be required to be bonded. All bidders will need to satisfy the qualifications noted in Division 2 and on the drawings.
- B. Use adequate numbers of skilled workmen/women who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the specified requirements and methods needed for proper performance of this contract.
- C. The Contractor shall warrantee all Contract Work for the first year after installation for quality and workmanship, unless otherwise specified in Division X.

#### 1.08 BID BOND-SECURITY

Each bid must be accompanied by cash, certified check of the bidder, or by bid bond prepared on the form of the bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the City of Waltham, in the amount of **five (5) percent** of the bid. Such cash, checks or bid bonds will be returned to all except the three preferred bidders within three days after the opening of bids, and the remaining cash, checks, or bid bonds will be returned promptly after the City of Waltham, and the accepted bidder have executed the contract, or, if no award has been made within 45 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

#### 1.09 LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within five days after he has received notice of the acceptance of the bid, shall forfeit to the City of Waltham, as liquidated damages for such failure or refusal, the security deposited with the bid.

#### 1.10 CONDITIONS OF WORK

- A. Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all materials and labor necessary to carry out the provisions of the contract. Insofar as possible, the Contractor in carrying out his work, must employ such methods or means as will not cause any interruption with the work of any other contractor.
- B. Each bidder must inform himself fully of the project requirements of Division 1 of the Technical Specifications, which relate to the conditions of the work.
- C. Examination of Documents and Site: Each bidder shall carefully examine the documents and the construction site to obtain first hand knowledge of existing conditions which can be determined by examining the site and documents.

#### 1.11 WITHDRAWAL OF BIDS

- A. A bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids.
- B. No bidder may withdraw his bid after the date and time set for opening thereof, and bids shall be subject to acceptance by the City of Waltham during this period.

#### 1.12 AWARD OR REJECTION OF BIDS

The Contract, if awarded, will be awarded to the responsible bidder who has produced the best bid as determined by the City of Waltham, subject to the City of Waltham's right to reject any or all bids and to waive informality and irregularity in the bids and in the bidding.

#### 1.13 EXECUTION OF AGREEMENT

- A. The form of Agreement which the successful bidder will be required to execute is included in the Project Manual.
- B. The bidder to whom the Contract is awarded shall, within seven calendar days after notice of award and receipt of Agreement forms from the City of Waltham, sign and deliver required copies to the City of Waltham.
- C. At or prior to delivery of the signed Agreement, the bidder to whom the Contract is awarded shall deliver to the City of Waltham those Certificates of Insurance and Materials Payment Bonds and Performance Bond as may be required by the City of Waltham.
- D. Bonds and Certificates of Insurance shall be approved by the City of Waltham before the successful bidder may proceed with the work. Failure or refusal to provide Bonds or

Certificates of Insurance in a form and amount satisfactory to the City of Waltham shall subject the successful bidder to loss of the contract and any damages resulting therefrom.

- E. The City of Waltham may require the Contractor to execute a lien bond in order to discharge liens initiated by a subcontractor in the event that a subcontractor institutes such a lien.

#### 1.14 TIME OF COMPLETION

- A. **The date of Substantial Completion of the project will be 180 days after the date of the Notice to Proceed, except as modified by change order.**
- B. The bidder is hereby notified that time is of the essence concerning this proposed work and that the bidder must agree to commence work on or before a date to be specified. Bidder must agree also to submit as part of the executed contract, a progress schedule in such form as to be determined by the City of Waltham and that deviation from said progress schedule shall be a breach of the contract, except as modified by change order. **The City of Waltham's liquidated damage** shall not to be less than **\$500.00** per calendar day, if substantial work extends past the **Substantial Completion date**.
- C. The City of Waltham's liquidated damages shall not be less than **\$500.00** per calendar day, if work needed to complete the punch list items extends past the **Final Completion date**.

\*\*\*END OF SECTION\*\*\*

**SECTION 00310**

**BID FORM**

**Fitch Spray Park Construction**

**Waltham, Massachusetts**

TO: Joseph P. Pedulla  
CHIEF PROCUREMENT OFFICER  
WALTHAM, MASSACHUSETTS 02154

The undersigned, as bidder, hereby declares that he/she has carefully examined the specifications and provisions attached hereto, and that he/she proposes and agrees, if this bid is accepted, that he/she will contract with the CITY OF WALTHAM in the form prescribed for the **FITCH SPRAY PARK CONSTRUCTION** for the City during the year **2011** as herein specified and will provide therefore all necessary labor, machinery and equipment, and will perform all work in the manner prescribed and according to the requirements of the Contract Documents.

Accompanying this bid is case, a certified or treasurer’s check payable to the CITY OF WALTHAM, or a bid bond in the amount of FIVE PERCENT (5%) OF THE CONTRACTOR’S BID PRICE.

If this bid shall be accepted and the undersigned shall fail to execute the required contract, in accordance with the terms herein set forth, within five days from the date of mailing a notice to the undersigned at the address given below that the contract is ready for signature, the CITY OF WALTHAM may, at its option, determine that this bid shall be null and void, and the aforesaid cash or checks shall become the property of the CITY OF WALTHAM; otherwise the said cash or checks shall be returned to the undersigned.

In accordance with M.G.L ch. 30, 39M., the undersigned certifies that the bidder has filed all state tax returns and paid all state taxes required by law.

In accordance with M.G.L., the undersigned certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by OSHA that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

**Bidder acknowledges receipt of the following addenda(s):**

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

Time for completion of the work is 180 calendar days.

1. **BASE BID:** The proposed contract price for the “Fitch Spray Park Construction” without alternates is \_\_\_\_\_ dollars

and \_\_\_\_\_ cents (\$\_\_\_\_\_).

2. **BIDS FOR ALTERNATIVES:** For each Alternative, list only the value of that specific alternate in the appropriate space provided. Do not add or summarize the alternative prices.

**For Add Alternate No. 1** (Irrigation System) **add** to the proposed contract price the following:

\_\_\_\_\_ dollars

and \_\_\_\_\_ cents (\$\_\_\_\_\_)

**Funding for this project may be subject to municipal appropriation.**



All prices quoted herein shall be firm for the duration of this contract, regardless of any changes in the cost of material or labor.

\_\_\_\_\_  
Signature of Bidder

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

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

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Fax Number

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

PROOF OF CONTRACTOR’S RESPONSIBILITY

Before a contract will be awarded to any bidder, he/she will be required to furnish evidence satisfactory to the City that he/she has all of the following qualifications:

- A. Ability, equipment, organization, and financial resources sufficient or enable him/her to construct and complete the work successfully within the time required.
- B. Experience during the past three (3) years in the successful completion of similar projects, the magnitude of which shall be not less than one-half (1/2) the work herein specified. In this connection, the attention of the bidder is directed to the "Bidder’s Experience" attached hereto, which shall be used in determining the responsibility of the bidder. The City may require additional information is necessary to determine the responsibility of the bidder.

An experienced bidder shall be construed to mean that the bidder has a minimum of two (2) individuals within his/her organization who each have the experience to supervise a job of this nature. Their experience shall include previous work in playground construction/structure installation and all associated and related aspects of site construction.

In the event the bidder fails, refuses, or neglects to submit and require information within the reasonable time stated in any request or fails to qualify as a responsible bidder, his/her bid guaranty shall be forfeited to the use of the City of Waltham, not as a penalty, but as liquidated damages.

The determination of whether a bidder is responsible shall rest solely with the City.

BIDDER’S EXPERIENCE

The following is a list of the projects similar in character and scope to the work specified under this contract, which have successfully been completed by this bidder during the past three years.

This information must be furnished by each bidder. A completed project is one that has been accepted and the final payment received from the City or authorized representative.

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\_\_\_\_\_  
Bidder’s Signature

\_\_\_\_\_  
Date

\*\*\*END OF SECTION\*\*\*

**SECTION 00500**  
**FORM OF AGREEMENT**  
**CITY OF WALTHAM**  
**HUD COMMUNITY DEVELOPMENT BLOCK GRANT AGREEMENT**  
**Fitch Spray Park Construction**

This AGREEMENT, made \_\_\_\_\_, 2011 by and between the City of Waltham, a municipal corporation of Massachusetts duly established by law and having its usual place of business in said City of Waltham, Middlesex County, in the Commonwealth of Massachusetts, party of the first part and hereinafter called, "the City", and \_\_\_\_\_ Corporation with a business location of \_\_\_\_\_

Party of the second part, hereinafter called, "the Grantee", a corporation organized and existing under the laws of the Commonwealth of Massachusetts

**WITNESSETH AS FOLLOWS:**

The parties hereinabove named, each in consideration of their agreements of the other or others, the City for itself and its successors or assigns, and the Grantee for themselves and their heirs, executors, administrators, successors and assigns, AGREE AS FOLLOWS:

1. That the Grantee will assist approximately 5237 low and moderate-income residents by *constructing/installing water spray play equipment & supporting utilities including new fencing, paving, site furniture, seating, shade shelters and plantings on wading pool site at 14 Ash Street, Waltham, MA 02452*
2. This activity will help provide a suitable environment for low and moderate-income residents by enhancing their access to services that improve their living conditions.
3. The City agrees to pay and the Grantee agrees to accept for everything furnished and done by the Grantee under this Agreement and for well and faithfully completing the work and the whole thereof and herein provided, the sum set forth in the proposal furnished, to wit: \$\_\_\_\_\_.

IN WITNESS WHEREOF the said parties have hereunto set their hands and seals, the City by its Mayor on the day and year above written.

**CITY OF WALTHAM**

**GRANTEE**

\_\_\_\_\_  
 Joseph P. Pedulla, Chief Procurement Officer, Date

\_\_\_\_\_  
 Grantee Date

\_\_\_\_\_  
 Ronald G. Vokey, Planning Director Date

\_\_\_\_\_  
 Sandra Tomasello, Recreation Director Date

\_\_\_\_\_  
 Dennis P. Quinn, Auditor Date

*I certify that \$\_\_\_\_\_ is available in: 290.175.2010.8032*

\_\_\_\_\_  
 John B. Cervone, City Solicitor Date

*As to form only, not substance*

\_\_\_\_\_  
 Jeannette A. McCarthy, Mayor Date

**SECTION 00503**  
**GENERAL PROVISIONS**

**CITY OF WALTHAM**  
**HUD COMMUNITY DEVELOPMENT BLOCK GRANT AGREEMENT**

**(Fitch Spray Park Construction)**

This AGREEMENT made as of \_\_\_\_\_, 2009 by and between \_\_\_\_\_, a *for-profit corporation of the Commonwealth of Massachusetts*, hereinafter referred to as the "Grantee" and the **CITY OF WALTHAM, MASSACHUSETTS**, a municipal corporation organized and existing under the laws of the Commonwealth of Massachusetts, acting by and through its Planning Director, and/or his designated staff, but without personal liability to him, or his staff, hereinafter referred to as "the City."

WITNESSETH THAT:

WHEREAS the City of Waltham, under the provisions of Title I of the Housing and Community Development Act of 1977, as amended, has approved a grant of Community Development Program funds provided to the City under the Community Development Block Grant Program (CDBG Program) by the United States Department of Housing and Urban Development (HUD) to the GRANTEE; WHEREAS said GRANTEE pledges to carry out the purposes and responsibilities associated therewith in connection with the City's Community Development Program, and WHEREAS this Agreement sets forth the terms and conditions under which the GRANTEE will become the recipient of said grant.

NOW THEREFORE, the parties do mutually agree as stated within the General Provisions and attachments following to wit:

**\*\*GENERAL PROVISIONS\*\***

1. **GRANT AMOUNT.** The City agrees to provide the Grantee a sum of Community Development Program funds as stated within Schedule A-Grant Amount and Project Budget attached hereto and made a part hereof, and for the purposes described in Schedule B-Grant Project, subject to compliance by the Grantee with all terms and conditions as set forth within the Agreement.
2. **GRANT PROJECT.** The Grantee shall do, perform, and carry out, in a satisfactory and proper manner, as determined reasonably and fairly by the City, the project described within Schedule B-Grant Project, attached hereto and made a part hereof in support of the City's Community Development Program.
3. **DURATION.** This Agreement is made as of the date first written above. It shall be binding upon the City on the date stipulated in Schedule C-Work Program and Schedule, attached hereto and made a part hereof. The Agreement shall continue to the termination date stated in said Schedule C. Project activities shall be undertaken and completed as required by said Schedule C in such a manner as to ensure expeditious completion consistent with the purposes of this Agreement.
4. **EXPENDITURES AND GRANT BUDGET.** The Grantee agrees that expenditures under this grant shall be limited to those costs directly related to the implementation of this Grant Project consistent with Schedule A- Grant Amount and Project Budget, attached hereto and made a part hereof. Said expenditures shall meet the eligibility standards set by HUD, in its various regulations concerning the operation of the Community Development Block Grant Program and incorporated into 24 CFR 570, and shall meet the principles and standards of cost allowability as set forth within OMB Circular A-122.

5. **RELEASE OF GRANT FUNDS.** The City agrees to release the grant funds specified in Schedule A-Grant Amount and Project Budget in accordance with the procedures for requisition and payment set forth in Schedule D-Release and Processing of Grant Project Funds, attached hereto and made a part hereof. However, the City reserves the right to hold grant funds for cause as determined fairly and reasonably by the City.
  
6. **GRANT AND FINANCIAL MANAGEMENT STANDARDS.** The Grantee agrees to comply with Attachment F of OMB Circular A-110 and such additional management requirements as specified by the City as set forth within Schedule E-Grant Management, attached hereto and made a part hereof. Upon request of the Grantee, the City will assist the Grantee in complying with applicable regulations and standards, and in establishing necessary administrative procedures and recordkeeping and financial control systems and procedures. This offer of assistance shall not in any way relieve the Grantee of the responsibility to ensure compliance with all relevant management requirements. Grantee agrees to adhere to the accounting principles and procedures required therein, utilize adequate internal controls and maintain necessary source documentation for all costs incurred. The Grantee shall administer its program in conformance with OMB Circulars A-122, "Cost Principles for Non-Profit Organizations," or A-21, "Cost Principles for Educational Institutions" as applicable. These principles shall be applied for all costs incurred whether charges on a direct or indirect basis. Grantees who are governmental and quasi-governmental agencies must comply with the applicable sections of 24 CFR Part 85, "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments," and OMB Circular A-87.
  
7. **TERMINATION OF GRANT AGREEMENT FOR CAUSE.** If, through any cause, the Grantee shall fail to fulfill in a timely manner all obligations under this Agreement, or shall cause Grant Project funds to be inappropriately expended, or if the Grantee shall violate any or all of the provisions of this Agreement, or refuses to accept conditions imposed by HUD through City regulations and directives as administered by the City, the City shall thereupon have the right to terminate this Agreement by written notice to the Grantee of such termination specifying the effective date thereof at least five (5) days before the effective date of such termination.

The City shall periodically evaluate the performance of the Grantee and may make a determination as to whether the Grantee has conformed with this Agreement and has a continuing capacity to carry out CDBG-assisted Grant Project activities in a timely manner. Such evaluation may, at the option of the City, include field visits, inspection of grant project files and records and such other monitoring measures as deemed necessary by the City. The Grantee shall make available to the City all grant project records in a central location and in a timely manner upon request of the City. Substandard performance as determined by the City will constitute non-compliance with this Agreement. If action to correct such substandard performance is not taken by the Grantee within a reasonable period of time after being notified by the Grantee, contract suspension or termination procedures will be initiated.

8. **TERMINATION OF GRANT AGREEMENT DUE TO LACK FEDERAL FUNDING.** In the event that funds are not made available to the City by HUD, the City shall notify the Grantee in writing as soon as possible of such development. This shall include any event where HUD determines that an activity or activities under this Agreement are deemed ineligible and therefore should not continue to be funded. Subsequently, the City shall meet with the Grantee to determine an appropriate termination date relative to the cessation of CDBG funds for the Agreement or any portion thereof, and to resolve any matters associated with such termination including, but not limited to a final financial settlement, and related matters. Following said meeting, the City shall confirm the termination date and any conditions of termination in writing to the Grantee. The Grantee shall be rendered payment for such costs as authorized and accepted by the City under the provisions

of this Agreement and as determined to be includable within the final financial settlement based on such available remaining funds as may be available up to the cessation of federal CDBG funding. The Grantee understands and agrees that the City assumes no obligation for payment of any cost under this Agreement, regardless of date incurred, unless identified during the Grant closeout process and incorporated in the final financial settlement.

9. **CHANGES.** The City may from time to time require changes in the Grant Project and/or its implementation. Such changes, including any increase in the Grant Amount, and/or increase in the duration of the Agreement, which are mutually agreed upon shall be incorporated in written amendments to this Agreement. However, the City reserves the right to (a) reduce grant funds for cause as determined fairly and reasonably by the City upon written notice at least five days before the effective date of such reduction; or (b) reduce the grant funds due to a decrease in federal funds received by the City.
10. **RECAPTURE OF FUNDS.** Upon determination by the City that the Grantee has failed to comply with any portion of the terms of this Agreement, and in particular has inappropriately expended Grant funds, the City may take such steps as necessary, in order to protect its ability to fulfill its obligations to HUD, including but not limited to legal action, to recapture grant funds already released to and/or expended by the Grantee.
11. **AUDIT AND INSPECTION.**
  - a. The Grantee hereby agrees that annually and at closeout, Grantee's financial records shall be audited and financial reports shall be prepared and attested to by a Certified Public Accountant. Said annual agency audit shall be conducted in accordance with current CITY policy concerning Grantee audits and, as applicable, OMB Circular A-133. Furthermore Grantee agrees to provide the CITY with all financial and management audit letters with attached concerns and findings within thirty (30) days of the completion of the audit. Any deficiencies noted in audit reports must be fully cleared by the Grantee within thirty (30) days after receipt by the Grantee.
  - b. Grantee agrees that CITY, the Department of Housing and Urban Development, the Comptroller General of the United States, or any of their duly authorized representatives shall have access to any records, Agreements, invoices, materials, payrolls, personnel records, books, documents, papers, financial records or computer data maintained, kept or used by Grantee which are related to this Agreement, for the purpose of making copies, audits, examinations, excerpts, and transcriptions. Such inspections may be made during normal business hours, and as often as the aforementioned governmental agencies deem necessary.
  - c. Grantee shall comply with the applicable provisions of Subpart K of the CDBG entitlement grant regulations and with OMB Circular No. A-133, which requires that all non-profit organizations receiving in excess of \$300,000 in Federal funds during their fiscal year must submit an audited financial statement. The CITY reserves the right to request a single or program-specific audit regardless of the Federal funding amount at the cost to the Grantee.
  - d. Failure of the Grantee to comply with the audit and/or inspection requirements herein shall constitute a violation of this Agreement and may result in the withholding of future payments.
12. **BONUS PROHIBITED.** It is agreed that the Grantee will not pay bonus, commission or fee for the purpose of obtaining City award of the Grant funds or approval of the Grant Project financed with this Grant.
13. **CONFLICT OF INTEREST.**
  - a. No member, officer, or employee of the City, or its designees or agents, no members of the governing body of Waltham, and no other public official of such locality or localities who

exercise any functions or responsibilities with respect to the CDBG Program during his or her tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, or work to be performed in connection with the project assisted under this Agreement.

- b. No Grantee agency official shall participate in any decision relating to this Agreement which affects his personal interest or the interest of any corporation, partnership, or other business for profit association in which he is directly or indirectly interested or has any personal or primary interest, direct or indirect, in this Agreement or the proceeds thereof. Individuals subject to conflict of interest provisions may nevertheless be members of, or associated with, or provide assistance to the Grantee agency so long as such persons do not have any financial interest in the activity or receive compensation for such services.
14. **NON-DISCRIMINATION LAWS AND REGULATIONS.** The Grantee understands that grant funds pursuant to this Agreement are provided in whole by Federal money and that the Grantee is expected, and hereby agrees, to comply with all laws - Federal, State, and local relative to non-discrimination and equal opportunity. In particular the Grantee shall comply with the Federal laws and Executive Orders as referenced in 24 CFR 570 and with the Executive Order No. HRC-X. No person in the United States shall on the ground of race, color, national origin, age, handicap, religion, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination in connection with this Federally funded Grant Project.
  15. **LIENS.** The Grantee represents that any property benefiting through installation or construction of improvements as part of the Grant Project is free from any attachments, tax liens, mechanics' liens or any other encumbrances.
  16. **HOLD HARMLESS.** The Grantee shall hold harmless, defend and indemnify the City from any and all claims, actions, suits, charges and judgments whatsoever that arise from any attachments, tax liens, mechanics' liens or other encumbrances.
  17. **IDENTIFICATION OF DOCUMENTS.** All reports and other documents completed under this Agreement other than documents exclusively for internal use of the Grantee or the City of Waltham, shall carry the following notation on the front cover or title page (or, in the case of maps, in the title block):

*The preparation of this (report, document, etc.) is financially aided through a City of Waltham Community Development Program grant under the provisions of Title I of the Housing and Community Development Act of 1977, as amended, and administered by the United States Department of Housing and Urban Development.*
  18. **ASSIGNABILITY.** The Grantee shall not assign any interest in this Agreement and shall not transfer any interest in the same (whether by assignment or notation) without the prior written consent of the City hereto.
  19. **OFFICIALS NOT TO BENEFIT.** No Members or Delegates to the Congress of the United States of America, and no Resident Commissioner, shall be admitted to any share or part hereof or to any benefit to arise here from.
  20. **GENERAL COMPLIANCE.** The Grantee certifies that the activities carried out with funds provided under this Agreement will meet one or more of the CDBG Program's National Objectives: 1.) benefit low/moderate-income persons, 2.) aid in the prevention or elimination of slums or blight, 3.) meet community development needs that have a particular urgency—as defined in 24 CFR Part 370.208.

The Grantee agrees to comply with the requirements of Title 24 of the Code of Federal Regulations, Part 570 (the Housing and Urban Development regulations concerning Community Development Block grants (CDBG)) and Part 85 (Administrative Requirements for Grants and Cooperative Agreements to State, Local and Federally Recognized Indian Tribal Governments). The Grantee also agrees to comply with all other applicable federal, state and local laws, regulations and policies governing funds provided under this Agreement. The Grantee further agrees to utilize funds available under this Agreement to supplement rather than supplant funds otherwise available.

21. **INDEPENDENT CONTRACTOR.** Nothing contained in this Agreement is intended to, or shall be construed in any manner, as creating or establishing the relationship of employer/employee between the parties. The Grantee shall at all times remain an independent contractor with respect to the services to be performed under this agreement. The City of Waltham shall be exempt from payment of all unemployment compensations, FICA, retirement, life and/or medical insurance and Workers' Compensation Insurance as Grantee is an independent Grantee.
22. **HOLD HARMLESS.** The Grantee shall hold harmless, defend and indemnify the City of Waltham from any and all claims, actions, suits, charges and judgments whatsoever that arise out of the Sub-recipient's performance or nonperformance of the services or subject matter called for in this agreement.
23. **WORKER'S COMPENSATION.** The Grantee shall provide Worker's Compensation Insurance coverage for all employees involved in the performance of this contract.
24. **INSURANCE & BONDING.** The Grantee shall carry sufficient insurance coverage to protect contract assets from loss due to theft, fraud and/or undue physical damage, and at a minimum shall purchase a blanket fidelity bond covering all employees in an amount equal to cash advance from the City of Waltham.
25. **OTHER APPLICABLE FEDERAL LAWS AND REGULATIONS.** The Grantee agrees to comply with the requirements as applicable to the project described within Schedule B-Grant Project, pursuant to the following:
  - a. Environmental Policy Act of 1969 and HUD Environmental Review Procedures.
  - b. Public Law 89-665 and Archaeological and Historical Preservation Act of 1974 (Public Law 93-291) and Executive Order 11593, including procedures in 36 CFR Part 800.
  - c. Labor Standards as determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a - 5) and Grant Work Hours and Safety Standards Act (40 U.S.C. 327-333), and with other applicable Federal laws and regulations pertaining to labor standards.
  - d. Americans with Disabilities Act (A.D.A.) of 1990 and Section 504 of the Rehabilitation Act of 1973.
  - e. Title VI of the Civil Rights Act of 1964 as amended, Title VIII of the Civil Rights Act of 1968 as amended, Section 104(b) and Section 109 of Title I of the Housing and Community Development Act of 1974 as amended, the Age Discrimination Act of 1975, Executive Order 11063, and with Executive Order 11246 as amended by Executive Orders 11375 and 12086.
  - f. Hatch Act.
  - g. National Flood Insurance Program.
  - h. Clean Air Act and Federal Water Pollution Control Act.
  - i. Lead-Based Paint Poisoning Prevention Act.
  - j. The Use of Assisted Housing by Aliens Act of 1996; and amendments thereafter.



Prior to initiation of the Grant Project, the Grantee shall request a meeting with the City to discuss and determine whether any provisions of the above apply to the subject Grant Project. In the event that any of the above laws and regulations applies, the City and Grantee shall cooperate to ensure compliance with all appropriate requirements and procedures. No Grant funds shall be released prior to the satisfaction of the above laws and regulations unless so permitted by same and by such Community Development Program Grant Agreement as executed between the City and the Department of Housing and Urban Development.

26. **LOBBYING PROHIBITED.** Grant funds shall not be used by the Grantee for publicity or propaganda purposes designed to support or defeat legislation pending before Federal, State or local government except as provided and limited by OMB Circular A-122, Paragraph B 21 (b).
27. **CITY OF WALTHAM, USE AND DISPOSITION OF PROPERTY.** The Grantee shall comply with all applicable provisions as stated within Schedule-E Grant Management as attached hereto and made a part hereof, to City of Waltham's use and disposition of property.
28. **OTHER PROVISIONS.** All other provisions, if any, are set forth within the following schedules attached hereto and made a part hereof as listed below under "Attachments."

**ATTACHMENTS.** Attached hereto are the following schedules that are incorporated into this Grant Agreement and made a part hereof:

- Schedule A- Grant Amount and Project Budget
- Schedule B- Grant Project
- Schedule C- Work Program and Conditions
- Schedule D- Release/Processing of Grant Project Funds
- Schedule E- Grant Management
- Schedule F- Environmental Conditions
- Schedule G- Personnel Conditions
- Schedule H- Forms
- Schedule I- Insurance & Indemnification
- Schedule J- Certificate of Authority
- Schedule K- Satisfaction of State Tax Requirements (Attestation Clause)
- Schedule L- Bonds
- Schedule M- Project Manual / Scope of Work

**1. AMOUNT OF GRANT.**

The CITY hereby agrees to provide funds through its Community Development Program funds to the Grantee in the amount of **\$XXX,XXX.00** said amount to be subject to the terms of this Agreement and as set forth within Schedule A herein.

**2. PROJECT BUDGET.**

- a. While it is understood that the overall program budget for the subject program may be derived from a variety of funding sources assembled by the Grantee, the City and the Grantee agree that the Community Development Grant project budget (i.e., the Community Development Program-funded portion of the overall budget) shall consist of and be limited to the following expenditures:

<u>ITEM</u>	<u>BUDGET</u>
<i>Constructing / installing water spray play equipment and supporting utilities, paving, fencing, site furniture, shade shelters, and plantings on the former wading pool site at 14 Ash Street in Waltham, Massachusetts</i>	<b><u>\$XXX,XXX.XX</u></b>
<b>TOTAL GRANT</b>	<b><u>\$XXX,XXX.XX</u></b>

- b. The Grantee agrees to maintain such financial and program documentation in project files as shall clearly establish the relationship of Community Development portion of the overall program budget and persons benefiting from program services consistent with the requirements as stated in Schedule B-Grant Project, Paragraphs 4 through 6.

**3. EXPENDITURES.**

The Grantee agrees that expenditures under this Grant Project shall be limited to the provision of the subject **construction project** as described within Schedule B- Grant Project herein, and shall meet the eligibility and cost allowability standards referenced within Schedule C – Work Program and Conditions and General Provisions, Paragraph 4 - Expenditures and Grant Budget.

**4. BUDGET CHANGES.**

- a. Any increases in the total grant budget shall require a formal change order and contract amendment per General Provisions, Paragraph 9-Changes, herein.
- b. Multiple line item budgets may be revised internally, i.e., by moving funds from one line item to another by a written request and review procedure without formal amendment. In the event the Grantee desires to make an internal budget reallocation, the Grantee shall request, in writing, prior approval of the Planning Director. The Planning Director shall review such requests and may decline requested budget revisions or approve such revisions of line item amounts as are reasonable and appropriate and shall confirm such revisions by letter. It is understood that such revisions shall not be deemed an amendment to the Grant Agreement except when a revision has the effect of increasing the Grant Amount, in which case such revision shall be deemed a change subject to sub-paragraph a. above.

- 1. **PURPOSE:** The Grantee will provide a suitable environment for people with low or moderate incomes by enhancing their access to basic services and public facilities within the City of Waltham by *constructing / installing water spray play equipment and supporting utilities, paving, fencing, site furniture, shade shelters, and plantings on the former wading pool site at 14 Ash Street, Waltham, Massachusetts.*
- 2. **CDBG OBJECTIVE:** *Provide a suitable environment for low or moderate-income people*
- 3. **CDBG OUTCOMES:** *Enhance accessibility of Fitch Spray Park to low and moderate-income people*
- 4. **OUTPUT INDICATOR:** *Improvement to public facilities*
- 5. **TARGET OUTPUT:** *Construction/installation of new water spray play equipment, fencing, , landscaping, seating and other improvements at Fitch Spray Park*
- 6. **LOCATION:** *Fitch Spray Park, 14 Ash Street, Waltham, MA 02453*

**7. PROGRAM DESCRIPTION**

The Grantee shall carry out in a satisfactory and proper manner, as determined reasonably and fairly by the City, the project entitled *“Fitch Spray Park Construction”* as expanded upon in the Sub-Recipient’s proposal and bid package, submitted to the Waltham Purchasing Department and incorporated herein as Appendix L- Proposal / Scope of Work. The program shall consist of provision of the following services: *construction of improvements at Fitch Spray Park*. Said services shall consist of:

*Constructing / installing water spray play equipment and supporting utilities, paving, fencing, site furniture, shade shelters, and plantings on the former wading pool site at 14 Ash Street in Waltham, Massachusetts*

**8. LOW/MODERATE INCOME BENEFIT**

The public improvements described in the Grantee’s proposal and bid package will benefit approximately **2505** **low or moderate-income people** with disabilities, who represent **47.8%** of the resident population/ clientele of the improvement’s estimated service area in the City of Waltham.

**SCHEDULE C – WORK PROGRAM AND CONDITIONS**

**1. DURATION OF GRANT AGREEMENT AND TIME OF PERFORMANCE.**

- a. Agreement Date. This Agreement, made as of the date first written above, is binding upon signature by the Mayor of the City of Waltham.
- b. Performance Schedule. The Grantee shall perform the services and program described in Schedule B-Grant Project, herein consistent with the following dates:

*Project start date:* As stated in the specifications detailed in the Project Manual entitled "Fitch Spray Park Construction, Waltham, MA."

*Project completion date:* As stated in the specifications detailed in the Project Manual entitled "Fitch Spray Park Construction, Waltham, MA.", unless amended per mutual consent.

- c. Termination Date. This Agreement shall terminate on June 30, 2013, unless amended or terminated consistent with the General Provisions of this contract.

Delete the following paragraphs in their entirety: 16.4.1 & 16.4.2, 16.5.1 &16.5.2.

**2. GENERAL CONDITIONS**

1 INFORMATION All information shall come from the Office of the City 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 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 them arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the Contractor, his 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 United States of America and all agencies having jurisdiction.

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 of April 1, 2011 renewable at the discretion of the Waltham Purchasing Department for an additional two (2) one-year periods ending June 30, 2013.

7. INSURANCE WORKMAN'S COMPENSATION: The Contractor shall provide by 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. COMPREHENSIVE GENERAL LIABILITY

Bodily Injury: Property Damage:	\$1,000,000 Each Occurrence
AUTOMOBILE (VEHICLE) LIABILITY	\$2,000,000 Aggregate
Bodily Injury Property Damage	\$1,000,000 Each Occurrence
UMBRELLA POLICY	\$2,000,000 Aggregate
	\$2,000,000 Each Occurrence
	\$1,000,000 Aggregate

\$2,000,000

General liability LABOR AND  
 8. MATERIALS BOND

The Contractor agrees to execute and deliver to the City, a Labor and Materials or Payment Bond equal to 100% 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.

- 1 PERSONNEL: The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City 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 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 Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Chief Procurement Officer.
- 2 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.
- 3 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.
- 4 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.
- 5 CONTRACT OBLIGATIONS Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.
- 6 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.
- 7 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 CPO PRIOR to the commencement of the change order work. 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

8. 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.
9. 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.
10. RIGHT TO AUDIT The Waltham Purchasing Department 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.

**1. METHOD OF PAYMENT**

The City agrees to release the grant funds specified in Schedule A-Grant Amount and Project Budget on a "pay as you go" or reimbursement basis consistent with the procedure outlined herein. The City will not advance funds to the Grantee under any circumstances. The provisions of Schedule A as well as all other provisions of this Grant Agreement must be satisfied prior to the release of funds.

**2. REQUISITION**

Following initiation of the Grant Project, the Grantee shall prepare and submit requisitions to the City based upon completed specified tasks consistent with Schedule A—Grant Amount and Project Budget. The Grantee understands and agrees that it may not requisition the City for any costs covered by or charged to any other funding source.

The requisition should be addressed to:

CDBG Administrator  
 Planning Department  
 119 School Street  
 Waltham, MA 02451

Said requisition shall consist of the following:

- a. Cover requisition/transmittal on Grantee stationery signed by the Grantee clearly identifying: the City's Purchase Order number, the number of the requisition, the Grant Project by name and by Grant Agreement number, the IDIS number (identified in the upper right hand corner of the contract), and the amount(s) and type(s) of cost(s) incurred.
- b. Supporting Documentation shall accompany the requisition and shall satisfy all requirements detailed in Schedule C, particularly Article 3 of Paragraph 2 ("Compensation and Method of Payment").

**3. REVIEW AND RELEASE**

The City shall review each requisition and process same for payment through the City's comptrolling/disbursing system. It is understood that, subject to the timely receipt of proper requisitions and no other circumstances intervening, after review and approval by the Clerk, the City agrees to release payment within approximately 21 days. The Grantee understands that submission of incomplete or erroneous requisitions may result in delay of payment.

**4. ERRONEOUS REQUISITIONS**

The Grantee understands that improperly prepared requisitions will not be processed and will be returned. Reimbursement will be held pending receipt of accurate information together with such source documentation as required. Upon receipt of three improperly prepared requisitions, field audit procedures may be initiated to evaluate financial management, control and record keeping procedures utilized by the Grantee.

**5. FINAL PAYMENT**

The City reserves the right to hold release of final payment pending satisfaction by the Grantee of all terms and requirements of this Grant Agreement.



**The Grantee shall comply with the provisions herein referenced and/or stated in the implementation of the Grant Project, as applicable.**

1. Retention and Custodial Requirements for Records. Refer to 24 CFR 85.42 or 84.50-84.58 for nonprofits. The Grantee shall retain all records pertinent to expenditures incurred under this Agreement for a period of three (3) years after the termination of all activities funded under this Agreement. Records for non-expendable property acquired with funds under this Agreement shall be retained for three (3) years after Grantee received final payment. Notwithstanding the above, if there is litigation, claims, audits, negotiations or other actions that involve any of the records, cited and that have started before the expiration of the three (3) year period, then such records must be retained until completion of the actions and resolution of all issues, or the expiration of the three (3) year period, whichever occurs later.
2. Standards for Grantee Financial Management Systems
  - a. Refer to 24CFR 85.20 to 85.25 or 84.20 to 84.28 for nonprofits.
  - b. The Grantee shall provide such financial reports and additional source documentation and to comply with such reasonable additional financial control procedures as may be required by the City.
  - c. The Grantee shall ensure that accurate requisitions are submitted in a timely manner and are consistent with Schedule D—Release and Process of Grant Funds.
  - d. Refer to requirements stated in CDBG regulations at 24 CFR 570.500 (a), 570.503 (b)(8), and 570.504, which pertain to income generated by projects financed in whole or in part by Federal funds.
  - e. Audit reports shall clearly identify CDBG receipts and expenditures separate from other funding sources.
  - f. OMB Circular A-133 requires that any non-federal entity expending federal funds in excess of \$300,000 in a year shall have an audit made not less frequently than annually. A copy of this audit shall be submitted to the Planning Department and to the HUD Office of Inspector General. The audit must be prepared in accordance with A-133 and clearly identify CDBG receipts and expenditures.
  - g. The Grantee shall submit a copy of its most recent audit to the City upon request of the Planning Director.
  - h. The Grantee shall transmit its Annual Financial Reports and Statements to the Planning Department. These reports shall clearly identify CDBG receipts and expenditures separate from other funding sources.
3. Diversion of Funds Prohibited

The Grantee shall under no circumstances rebate, divert, or redirect funds received to any other activity(ies) or cost(s). Any such rebate, diversion, or redirection of funds from the approved activity(ies) and cost(s) as described in Schedule A-Grant Amount and Project Budget and Schedule B-Grant Project shall be a violation of this Agreement and subject to legal and disciplinary proceedings pursuant to General Provisions-Paragraphs 7 and 10, herein.
4. Procurement Standards
  - a. Grantee shall comply with all relevant procurement standards established by federal, state and local laws, regulations and policies. Failure to do so may result in the termination of the Grant Agreement or recapture of funds, per General Provisions-Paragraphs 7 and 10.
  - b. Refer to 24 CFR 85.36 or to 84.40 - 84.48 for nonprofits.
  - c. Refer to 24 CFR 135 and Section 3 of the Housing and Urban Development Act of 1968 for required compliance with local entrepreneurship and employment provisions.

## 5. Personnel Procurement and Management

### a. Standards

The Grantee shall comply with all applicable federal, state and local laws and regulations regarding recruitment and hiring. This includes personnel to be engaged for personal services on a basis other than payroll basis. Such personal services may include, but are not limited to health, social services, counseling, etc., and should be retained by means of an employment agreement. The following shall be adhered to as applicable:

- (1) Executive Order 11246.
- (2) City of Waltham Affirmative Action Plan.

The Grantee shall keep on file the documentation of the recruitment/hiring process and the reasons for selection of any individual for employment or engagement, as noted in Paragraph b-Administration, following.

### b. Administration

The Grantee shall provide compensation and related benefits (if any) to its employees consistent with the compensation policy adopted by the agency for its payroll staff, and for its personnel engaged on an employment agreement basis. Further, the Grantee shall maintain a personnel file for each payroll employee, and a file for each person providing personal services pursuant to a non-payroll engagement arrangement documenting the reasons for hiring or for engagement, and terms of employment or of engagement, including compensation, benefits (if any) and related matters. Such file should include a copy of a letter of appointment for each payroll staff hired, and an employment agreement for each non-payroll engagement secured.

### c. Standards for Hiring

The Grantee shall consider for employment or engagement, the candidate who best meets the requirements of the job description of a particular position or the requirements of the personal services engagement. Such job description or description of personal services to be provided shall be prepared in advance by the Grantee and must be reviewed and approved by the Grantee's Principals prior to advertisement. The Grantee shall ensure that all equal opportunity provisions as stated in the City's Affirmative Action Plan are duly considered and are incorporated in the recruitment process.

### d. City Review Procedure

(1) The Grantee shall submit a memorandum on each occasion of personnel procurement, including persons to be retained on an employment agreement basis, briefly describing the recruitment process including advertisement of position and minority outreach, indicating responses received (including number of minorities, if any), indicating finalists interviewed, (including number of minorities, if any), identifying the person recommended for employment or engagement, describing terms and compensation, and stating the basis for selection. The memorandum must be transmitted to the City not later than seven working days prior to the proposed date for notification to the successful candidate and should enclose a proposed letter of appointment for payroll hires and a proposed employment agreement for non-payroll engagements. An employment agreement shall, at the minimum, clearly state the work to be performed, compensation, duration, termination, appropriate Federal provisions, and other applicable terms, and shall be co-signed by the Grantee and by the individual. The City will review the proposed personnel action and will respond in writing to the Grantee in a timely manner, with the intent of meeting the Grantee's procurement time frame. Following City approval, the Grantee may proceed to hire or engage the selected individual.

- (2) The City reserves the right to periodically review the Grantee's personnel procurement practices, documentation, compensation, and equal opportunity procedures, and may withhold or adjust payment should the Grantee be found in non-compliance with any applicable provisions.

6. Technical Assistance.

Upon request of the Grantee, the City agrees to provide general technical assistance in one or more of the following areas:

- a. Bidding procedures including furnishing of equal opportunity, prevailing wage rates, Section 3, Anti-Kick-Back, and Davis/Bacon regulations, as applicable).
- b. Compliance Systems (Equal Opportunity)

This offer of assistance shall not in any way relieve the Grantee of the responsibility to ensure compliance with all relevant management requirements.

7. Grant Project File

The Grantee shall establish all such project files as necessary for the implementation of the subject project. Such files shall, at the minimum, contain the specific sections for the following:

- a. General project correspondence and related items
- b. Financial source documentation and associated documentation
- c. Procurement procedures and associated documents
- d. Compliance with applicable State and Federal) regulations
- e. Project reports
- f. Documentation of persons benefiting from grant activities and, in particular, documentation of primary benefit to persons of low and moderate income
- g. Personnel

8. Property Records

The GRANTEE shall maintain real property inventory records that clearly identify properties purchased, improved or sold. Properties retained shall continue to meet eligibility criteria and shall conform to the "changes in use" restrictions specified in 24 CFR Parts 570.503(b)(8), as applicable.

9. Revision of Assets

At the expiration of this Agreement the Grantee shall transfer to the CITY any CDBG funds on hand at the time of expiration and any accounts receivable attributable to the use of CDBG Funds. Furthermore, any real property under the Grantee's control that was acquired or improved in whole or in part with CDBG funds in excess of \$25,000 shall be either:

- a. Used to meet one of the national objectives in 570.208 until five years after expiration of this agreement, or
- b. Shall be disposed of in a manner that results in the CITY being reimbursed in the amount of the current fair market value of the property less than any portion thereof attributable to expenditures of non-CDBG funds, for acquisition of, or improvements to, the property. Such reimbursement is not required after the period of time specified in accordance with (a) of this section.

10. Reporting and Payment Procedures/ Program Income

The Grantee understands that funds paid under this Agreement are for the services specified in the Scope of Services and such services are not intended to result in the generation of Program Income as defined in 24 CFR 570.500(a). In the event that the Grantee generates Program Income as a result of funds paid under this Agreement, then the Grantee comply with all requirements set forth at 24 CFR 570.504. By way of further limitations, the Grantee shall pay such Program Income to the CITY. In the event that Program Income is generated by Grantee as a result of funds paid under this Agreement and such Program Income is not paid to the CITY, then such Program Income shall be used only for the performance of services set forth in the Scope of Services, all other provisions of this Agreement shall apply to the use of said Program income and the Payment to the Grantee under this Agreement will be reduced by the amount of said Program Income.

Any Program Income held by the Grantee at the time of the expiration of this Agreement or generated after the expiration of this Agreement will be paid to the CITY at such time as it is received by the Grantee.

A. Air and Water

The Grantee agrees to comply with the following regulations insofar as they apply to the performance of this contract:

1. Clean Air Act, 42 U.S.C., 1857, et seq.
2. Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251, et seq., as amended 1318 relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
3. Environmental Protection Agency (EPA) regulations pursuant to 40 C.F.R., Part 50, as amended.
4. National Environmental Policy Act of 1969.
5. HUD Environmental Review Procedures (24 CFR, Part 58).

B. Flood Disaster Protection

The Grantee agrees to comply with the requirements of the Flood Disaster Protection Act of 1973 (P.L.-2234) in regard to the sale, lease or other transfer of land acquired, cleared or improved under the terms of this contract, as it may apply to the provisions of this contract.

C. Lead-Based Paint

The Grantee agrees that any construction or rehabilitation of residential structures with assistance provided under this contract shall be subject to HUD Lead-Based Paint Regulations at 24 CFR 570.608, and 24 CFR Part 35, and in particular Sub-Part B thereof. Such regulations pertain to all HUD-assisted housing and require that all City of Walthams, prospective City of Walthams, and tenants or properties constructed prior to 1978 be properly notified that such properties may include lead-based paint. Such notification shall point out the hazards of lead-based paint and explain the symptoms, treatment and precautions that should be taken when dealing with lead-based paint poisoning.

D. Historic Preservation

The Grantee agrees to comply with the Historic Preservation requirements set forth in the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470) and the procedures set forth in 36 CFR, Part 800, Advisory Council on Historic Preservation Procedures for Protection of Historic Properties, insofar as they apply to the performance of this contract.

In general, this requires concurrence from the State Historic Preservation Officer for all rehabilitation and demolition of historic properties that are fifty years old or older or that are included on a Federal, State, or local historic property list.

A. Civil Rights

1. Compliance

The Grantee agrees to comply with Title VI of the Civil Rights Act of 1964 as amended, Title VIII of the Civil Rights Act of 1968 as amended, Section 109 of Title I of the Housing and Community Development Act of 1974, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Executive Order 11063, and with Executive Order 11246 as amended by Executive Orders 11375 and 12086.

2. Nondiscrimination

The Grantee will not discriminate against any employee or applicant for employment because of race, color, creed, religion, ancestry, national origin, sex disability or other handicap, age marital status, or status with regard to public assistance. The Subrecipient will take affirmative action to insure that all employment practices are free from such discrimination. Such employment practices include but are not limited to the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Sub recipient agrees to post in conspicuous places, available to employees and applicant for employment, notices to be provided by the contracting agency setting forth the provisions of nondiscrimination clause.

3. Land Covenants

This contract is subject to the requirements of Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and 24 CFR 570, Part I. In regard to the sale, lease, or other transfer of land acquired, cleared or improved with assistance provided under this contract, the Sub recipient shall cause or require a covenant running with the land to be inserted in the deed or lease for such transfer, prohibiting discrimination as herein defined, in the sale, lease or rental, or in the use or occupancy of such land, or in any improvements erected or to be erected thereon, providing that the City of Waltham and the United States are beneficiaries of and entitled to enforce such covenants. The Sub recipient, in undertaking its obligation to carry out the program assisted hereunder, agrees to take such measures as are necessary to enforce such covenant, and will not itself so discriminate.

4. Section 504

The Grantee agrees to comply with any federal regulations issued pursuant to compliance with Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. 706) which prohibits discrimination against the handicapped in any federally assisted program. The City of Waltham shall provide the Sub recipient with any guidelines necessary for compliance with that portion of the regulations in force during the term of this contract.

B. Affirmative Action

1. Approved Plan

If this contract exceeds \$50,000, the Sub recipient agrees that it shall be committed to carry out pursuant to the City of Waltham's specifications an Affirmative Action Program in keeping with the principles as provided in President's Executive Order 11246 of September 24, 1965. The City of Waltham shall provide Affirmative Action guidelines to the Sub recipient to assist in the formulation of such program. The Sub recipient shall submit a plan for an Affirmative Action Program for approval prior to the award of funds.

If this contract is less than \$50,000, the Sub recipient must submit an Affirmative Action Statement for approval prior to the award of funds.

2. W/MBE

The Sub recipient will use its best efforts to afford minority and women-owned business enterprises the maximum practicable opportunity to participate in the performance of this contract. As used in this contract, the term "minority and female business enterprise" means a business at least fifty-one (51) percent owned and controlled by minority group members or women. For the purpose of this definition, "minority group members" are Afro-Americans, Spanish-speaking, Spanish surnamed or Spanish-heritage Americans, Asian-Americans, and American Indians. The Sub recipient may rely on written representations by Sub recipients regarding their status as minority and female business enterprises in lieu of an independent investigation.

3. Access to Records

The Sub recipient shall furnish and cause each of its sub-Sub recipients to furnish all information and reports required hereunder and will permit access to its books, records and accounts by the Grantee, HUD or its agent, or other authorized federal officials for purposes of investigation to ascertain compliance with the rules, regulations and provisions stated herein.

4. Notifications

The Grantee will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or worker's representative of the Grantee's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5. EEO/AA Statement

The Grantee will, in all solicitations or advertisements for employees placed by or on behalf of the Sub recipient, state that it is an Equal Opportunity or Affirmative Action employer.

6. Subcontract Provisions

The Grantee will include the provisions of Paragraphs VIII A, Civil Rights, and B, Affirmative Action, in every subcontract or purchase order, specifically or by reference, so that such provisions will be binding upon each sub-recipient or vendor.

C. Employment Restrictions

1. Prohibited Activity

The Grantee is prohibited from using funds provided herein or personnel employed in the administration of the program for political activities; sectarian, or religious activities; lobbying, political patronage, and nepotism activities.

2. OSHA

Where employees are engaged in activities not covered under the Occupational Safety and Health Act of 1970, they shall not be required or permitted to work, be trained, or receive services in buildings or surroundings or under working conditions which are unsanitary, hazardous or dangerous to the participants' health or safety.

3. Labor Standards

The Grantee agrees to comply with the requirements of the Secretary of Labor in accordance with the Davis-Bacon Act as amended, the provisions of Contract Work Hours, the Safety Standards Act, the Copeland "Anti-kickback" Act (40 U.S.C. 276, 327-333) and all other applicable

federal, state and local laws and regulations pertaining to labor standards insofar as those acts apply to the performance of this contract. The Grantee shall maintain documentation which demonstrates compliance with hour and wage requirements of this part. Such documentation shall be made available to the City of Waltham for review upon request.

The Grantee agrees that, except with respect to the rehabilitation of construction of residential property designed for residential use for less than eight (8) households, all contractors engaged under contracts in excess of \$2,000.00 for construction, renovation, repair of any building or work financed in whole or in part with assistance provided under this contract, shall comply with federal requirements adopted by the City of Waltham pertaining to such contracts and with the applicable requirements of the regulations of the Department of Labor, under 29 CFR, Parts 3, 1, 5 and 7 governing the payment of wages and ratio of apprentices and trainees to journeymen; provided, that if wage rates higher than those required under the regulations are imposed by state or local law, nothing hereunder is intended to relieve the Sub recipient of its obligation, if any, to require payment of the higher wage. The Grantee shall cause or require to be inserted in full, in all such contracts subject to such regulations, provisions meeting the requirements of this paragraph, for such contracts in excess of \$10,000.00.

4. "Section 3" Clause

a. Compliance

Compliance with the provisions of Section 3, the regulations set forth in 24 CFR 135, and all applicable rules and orders issued thereunder prior to the execution of this contract, shall be a condition of the federal financial assistance provided under this contract and binding upon the City of Waltham, the Grantees and any sub-recipients. Failure to fulfill these requirements shall subject the City of Waltham, the Sub recipient and any sub-recipients, their successors and assigns, to those sanctions specified by the agreement through which federal assistance is provided. The Grantee certifies and agrees that no contractual or other disability exists which would prevent compliance with these requirements.

The Grantee further agrees to comply with these "Section 3" requirements and to include the following language in all subcontract executed under this agreement:

"The work to be performed under this contract is a project assisted under a program providing direct federal financial assistance from HUD and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended 12 U.S.C. 1701. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given to lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the areas of the project."

The Grantee certifies and agrees that no contractual or other disability exists which would prevent compliance with the requirements.

b. Notifications

The Grantee agrees to send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or understanding, if any, a notice advising said labor organization or worker's representative of its commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.

c. Subcontracts



The Grantee will include this Section 3 clause in every subcontract and will take appropriate action pursuant to the subcontract upon a finding that the sub-recipient is in violation of regulations issued by the Grantor Agency. The Sub recipient will not subcontract with and sub-recipient where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR 135 and will not let any subcontract unless the sub-recipient has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

#### D. Conduct

##### 1. Assignability

The Grantee shall not assign or transfer any interest in this contract without the prior written consent of the City of Waltham thereto; provided, however, that claims for money due or to become due to the Grantee from the City of Waltham under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City of Waltham.

##### 2. Hatch Act

The Grantee agrees that no funds provided, nor personnel employed under this contract, shall be in any way or to any extent engaged in the conduct of political activities in violation of Chapter 15 of Title V United States Code.

##### 3. Conflict of Interest

The Grantee agrees to abide by the provisions of 24 CFR 570.611 with respect to conflicts of interest, and covenants that it presently has no financial interest and shall not acquire any financial interest, direct or indirect, which would conflict in any manner or degree with the performance of services required under this contract. The Grantee further covenants that in the performance of this contract no person having such a financial interest shall be employed or retained by the Grantee hereunder. These conflict of interest provisions apply to any person who is an employee, agent, consultant, officer, or elected official or appointed official of the Grantee, or of any designated public agencies or sub-recipients which are receiving funds under the CDBG Entitlement program.

##### 4. Subcontracts

###### a. Approvals

The Grantee shall not enter into any subcontracts with any agency or individual in the performance of this contract without the written consent for the City of Waltham prior to the execution of such agreement.

###### b. Monitoring

The Grantee will monitor all subcontracted services on a regular basis to assure contract compliance. Results of monitoring efforts shall be summarized in written reports and supported with documented evidence of follow-up actions taken to correct areas of noncompliance.

###### c. Content

The Grantee shall cause all of the provisions of this contract in its entirety to be included in and made a part of any subcontract executed in the performance of this agreement.

###### d. Selection Process

The Grantee shall undertake to insure that all subcontracts let in the performance of this agreement shall be awarded on a fair and open competition basis. Executed copies of all subcontracts shall be forwarded to the City of Waltham along with documentation concerning the selection process after award of the Contract.

1. Federal/State Equal Opportunity and Affirmative Action Requirements
  
2. Payroll forms
  
3. Manpower Utilization forms
  
4. Federal Davis Bacon Labor Wage Rates
  
5. Commonwealth of Massachusetts Prevailing Wage Rates



**The Commonwealth of Massachusetts  
Supplemental Equal Employment Opportunity  
Anti-Discrimination and Affirmative Action Program**

**CONTRACT COMPLIANCE PROCEDURE**

Pursuant to Section XI of the Commonwealth of Massachusetts Supplemental Equal Employment Opportunity, Anti-Discrimination and Affirmative Action Program for construction contracts, the administering and/or the contracting agency's Contract Compliance Officer or the Affirmative Action Staff is the designated agent of the Massachusetts Commission Against Discrimination (MCAD). The responsibilities of the Contract Compliance Officer (MCAD agent) are to conduct compliance monitoring and enforcement of the program requirements.

To ensure that the minority/women work force utilization goals on all construction contracts in excess of \$50,000, as well as minority/women business enterprise (M/WBE) goals are enforced effectively, the following procedures will be followed commencing with the initial contract specifications preparation and continuing throughout the life of the contract on all projects.

1. Contract Specification
2. Bid Advertisement
3. Pre-Bid Conference
4. Pre-Construction Conference
5. Reporting System
6. Monitoring System
7. Identifying and Reporting of Non-Compliance
8. Non-Compliance Procedures
9. Recommendation and Sanction

If there are any questions on MCAD, call Kristen Murphy, City Personnel Director, at (781) 314-3360

## **1. CONTRACT SPECIFICATION**

At the initial stage of contract specification preparation, the Contract Compliance Officer of the contracting agency must ensure the incorporation of the proper EEO/AA provisions in the general conditions of the contract.

## **2. BID ADVERTISEMENT**

The Contract Compliance Officer will review all Bid Advertisements before the notice is published to ensure that reference to the EEO/AA requirements is included.

## **3. PRE-BID CONFERENCE**

At the Pre-bid Conference, the Contract Compliance Officer will inform potential bidders of the EEO/AA requirements of the contract. These include, but are not limited to the following:

- a. Adhering to minority/women work force utilization and M/WBE participation goals for the contract.
- b. Informing potential bidders that the requirements are for the life of the contract.
- c. Informing potential bidders that the Sub-Contractors are obligated to comply with the same requirements and it is the responsibility of the Prime Contractor to ensure that Sub-Contractors comply with the contract provisions.
- d. Informing potential bidders of the required documents and forms that they must sign and submit with their bids, i.e., Bidder's Certification (Attachment A); Schedules for M/WBE Participation; M/WBE Letter of Intent; etc.
- e. Making information and/or resources available for M/WBE: i.e., State Office of Minority/Women Business Assistance (SOMWBA); Contractors Association of Boston (CAB); Small Business Development Corporation (SBDC); New England Minority Purchasing Council (NEMPC) and any other information that will assist the Prime Contractor in attaining the stated goals for M/WBE compliance.
- f. Making available minority/women work force referral agencies, i.e., Community agencies; Third World Jobs Clearing House, Apprentice Recruitment Program, etc.
- g. Question and answer period.

## **4. PRE-CONSTRUCTION CONFERENCE**

At the Pre-Construction Conference, the Contract Compliance Officer will discuss the specific EEO/AA requirements with the Prime and Sub-Contractors. The Contract Compliance Officer will also:

- a. Distribute all necessary documents and reporting forms as required under the contract provisions.
- b. Review EEO/AA requirements and goals in detail.
- c. Explain the contractor's obligations to comply with the EEO/AA requirements and goals.

- d. Emphasize the EEO/AA provisions in Section III and Section XIV.
- e. Provide information such as resources of minority/women work force and M/WBE referrals to assist the contractor in achieving compliance with the contract obligations.
- f. Review the necessary reporting forms, i.e., Contractor's Quarterly Projected Work force Table (Form CAD 85-1), Contractor's Weekly Work force Utilization Report (Form CAD 85), Contractor Certification (Attachment D for Prime Contractor, Attachment E for Sub-Contractor), etc..
- g. Secure the name and title of the EEO/AA Officer and Project Manager from the contractor with a letter signed by the Chief Executive Officer of the Contractor.

## 5. **REPORTING SYSTEM**

To ensure the proper compliance of the contractor's obligations in the utilization of his/her work force, the following reporting system will be implemented:

- a. Contractors must submit the Contractor's Quarterly Projected Work force Table (CAD 85-1) prior to the commencement of work and no later than five (5) working days prior to the start of each new quarter to the Contract Compliance Officer.
- b. Contractors must submit the Contractor's Weekly Work force Utilization Report (CAD 85) to the Contract Compliance Officer no later than the following Tuesday of each week.
- c. The Prime Contractor is responsible for the submission of all reports from all of his/her sub-contractors.
- d. The Contracting/Administering Agency's Contract Compliance Officer must prepare the Agency's Monthly Contract Compliance Report (CAD 75) for Minority/Women Work force Utilization and M/WBE Contract Activities Report and send them to MCAD no later than the 15th day of the month following the end of each quarter.

## 6. **MONITORING SYSTEM**

In order for the Contract Compliance Officer to effectively implement and enforce the EEO/AA requirements, the following mechanism will be utilized:

- a. Review of the weekly utilization reports submitted by the contractors.
- b. Verify the data on the weekly reports, by conducting on-site monitoring.
  - (1) On-site monitoring will be conducted either on a weekly or daily basis according to specific projects.
  - (2) When conducting on-site monitoring, the Contract Compliance Officer will initially meet with the contractor's on-site supervisor to obtain the necessary data.
  - (3) The Contract Compliance Officer will conduct a visual head count of all workers on-site used by each contractor, identifying the minority workers for each trade. If needed, an interview of each worker may be conducted to verify the information submitted by the contractor.

## **7. IDENTIFYING AND REPORTING OF NON-COMPLIANCE**

When the contractor's Weekly Work force Utilization Reports indicate that the contractor is in a condition of non-compliance and it is then verified by the Contract Compliance Officer's actual on-site visit, the procedures are as follows:

- a. The Contract Compliance Officer will notify and meet with the contractor to remedy their condition of non-compliance in an attempt to bring the contractor into compliance. All activities with the contractor must be documented.
- b. If the Contract Compliance Officer is unable to bring the contractor into compliance, then the Contract Compliance Officer shall send a preliminary notification of apparent non-compliance, citing specific sections of the contract EEO/AA provisions to the Prime Contractor and/or the Sub-Contractor via Registered Mail, detailing the necessary remedies and granting a time-frame of (14) days for the contractor to come into compliance.
- c. If the contractor remains in non-compliance, then the Contract Compliance Officer shall notify the MCAD and issue a second notice of apparent non-compliance, informing the contractor that a formal non-compliance investigation will be conducted. This will include a request for specific records and documentation that the contractor must submit within the specific compliance time frame of 14 days.

## **8. NON-COMPLIANCE PROCEDURES**

- a. Upon the completion of the investigation, if it is found that the contractor is still in a condition of non-compliance, then a final notice of apparent non-compliance will be issued, informing the contractor that a formal complaint of non-compliance will be filed at MCAD.
- b. When a non-compliance complaint is filed at MCAD, the complaint must include all documentation, such as reports; on-site reviews; correspondences; minutes of meeting and a copy of the contract.
- c. MCAD will conduct a conciliation conference in an attempt to bring the contractor into compliance. If the conference is unsuccessful, the MCAD will conduct an adjudicatory hearing pursuant to M.G.L. Chapter 30A and 804 CMR 9.00.
- d. The adjudicatory hearing will provide an opportunity for the contractor to present proof of his/her efforts to comply with the EEO/AA requirements. If the contractor can document that he/she has exhausted every possible measure to achieve compliance, then the contractor would be found in compliance with the EEO/AA contract obligations. If the contractor is unable to document every possible measure taken, then the contractor can be found in non-compliance. A final report of non-compliance will then be issued.

## **9. RECOMMENDATIONS OF SANCTIONS**

At the adjudicatory hearing, if the contractor is found to be in non-compliance with the EEO/AA requirements, MCAD will make a final report of non-compliance. Once MCAD issues a final finding of non-compliance, MCAD will recommend that the administering/contracting agency impose on the contractor one or more of the sanctions outlined in the Commonwealth of Massachusetts Supplemental Equal Employment Opportunity, Anti-Discrimination and Affirmative Action Program Section XIV within fourteen (14) days.



- NOTE:** (1) Non-compliance investigation will NOT be conducted without prior notice to the contractor.
- 2) Sanctions will NOT be imposed without providing an adjudicatory hearing (Due Process) to the contractor.

**10. OTHER MATTERS**

a) **LAND TRANSFER**

The land upon which this project is being constructed has not yet been completely transferred to the City of Waltham. The land is in the process of being transferred and accepted by City Government. As of the publication of this bid document the city does not have ownership of this property. It is expected, however, that by the time the bid is publicly opened this matter will be resolved. In the event, the land transfer is not completed the City reserves the right to reject all bids.

b) **DURATION OF CONTRACTOR'S OFFER**

The contractor agrees to honor the bid offer for this project for a period of 90 days following the bid opening.

c) **CLOSING OF QUESTIONS**

Formal questions will be answered via e-mail to all contractors of records until two days after the closing of the pre bid Meeting Thursday March 31, 2011. No questions will be accepted after the March 31, 2011

**Attachment A**

Bidder's Certification

The undersigned bidder hereby certifies he/she will comply with the minority/woman work force percentage ratio and specific affirmative action steps contained in the EEO/AA provisions of this Contract. Including compliance with the Minority/Woman Business Enterprise as required under these contract provisions. The contractor receiving the award of the contract shall be required to obtain from each of its subcontractors a copy of the bidder's certification and submit it to the contracting agency prior to the award of such subcontract, regardless of tier, that it will comply with the minority/woman work force ratio and specific affirmative action steps contained in these EEO/AA contract provisions.

\_\_\_\_\_  
Signature of Bidder

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

ATTACHMENT B

SCHEDULE FOR PARTICIPATION BY WOMEN & MINORITY BUSINESS ENTERPRISES

NOTE: Participation of a Minority-owned or Women-owned enterprise may be counted in only one category; the same participation cannot be used in computing the percentage of Minority participation and again of Women participation.

ITEM I - MINORITY BUSINESS ENTERPRISE PARTICIPATION IN THE WORK

<u>Name &amp; Address of MBE</u>	<u>Nature of Participation</u>	<u>Dollar Value of Participation</u>
----------------------------------	--------------------------------	--------------------------------------

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

TOTAL MBE COMMITMENT: \_\_\_\_\_

Percentage MBE Participation  $\frac{\text{(Total Commitment)}}{\text{(Total Bid Price)}} =$  \_\_\_\_\_

ITEM II - WOMEN BUSINESS ENTERPRISE PARTICIPATION IN THE WORK

<u>Name &amp; Address of WBE</u>	<u>Nature of Participation</u>	<u>Dollar Value of Participation</u>
----------------------------------	--------------------------------	--------------------------------------

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

TOTAL WBE COMMITMENT: \_\_\_\_\_

Percentage WBE Participation  $\frac{\text{(Total Commitment)}}{\text{(Total Bid Price)}} =$  \_\_\_\_\_

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

NAME OF GENERAL BIDDER: \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_

ATTACHMENT C

LETTER OF INTENT

MINORITY/WOMEN BUSINESS ENTERPRISE PARTICIPATION

(To be completed by MBE/WBE and submitted by the General Bidder)

1. My company intends to perform work in connection with the above project as:
  - \_\_\_ an individual
  - \_\_\_ a corporation
  - \_\_\_ joint venture with \_\_\_\_\_
  - \_\_\_ other (explain) \_\_\_\_\_
  - \_\_\_ a partnership
  
2. My company has been certified by SOMWBA and it has not changed its minority/women ownership, control or management without notifying SOMWBA within thirty (30) days of such a change.
  
3. My company understands that if your company is awarded the contract, your company intends to enter into agreement with my company to perform the activity described below for the prices indicated. My firm also understands that your firm, as General Bidder, will make substitutions only as allowed by Section 6.9 of those special provisions.

MBE/WBE PARTICIPATION

DESCRIPTION OF ACTIVITY

(with notation such as

"Labor Only", "Material

Supplier Only", Supplier, etc.)

QUANTITY

UNIT PRICE

AMOUNT

TOTAL AMOUNT: \_\_\_\_\_

\_\_\_\_\_  
AUTHORIZED AGENT FOR WBE/MBE

H

**Attachment D**

**Contractor's Certification**

A contractor will not be eligible for award of a contract unless such contractor has submitted the following certification, which is deemed a part of the resulting contract:

**CONTRACTOR'S CERTIFICATION**

\_\_\_\_\_  
Name of the General Contractor

certifies that:

- 1. It intends to use the following listed construction trades in the work under contract:

\_\_\_\_\_

\_\_\_\_\_

- 2. Will comply with the minority/woman work force ratio and specific affirmative action steps contained herein; and
- 3. Will obtain from each of its subcontractors and submit to the contracting or administering agency prior to the award of any subcontract under this contract the subcontractor's certification required by these bid conditions.

\_\_\_\_\_  
Signature of Authorized  
Representative of Contractor

**Attachment E**

**Subcontractor's Certification**

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

**SUBCONTRACTOR'S CERTIFICATION**

\_\_\_\_\_

Name of the Subcontractor

certifies that:

- 1. It intends to use the following construction trades in the work under the contract:

\_\_\_\_\_

\_\_\_\_\_

- 2. Will comply with the minority/woman work force ration and specific affirmative action steps contained herein; and
- 3. Will obtain from each of its subcontractors prior to the award of any subcontract under this contract the subcontractor's certification required by these bid conditions.

\_\_\_\_\_

Signature of Authorized  
Representative of Subcontractor









**U.S. Department of Labor**  
 Employment Standards Administration  
 Wage and Hour Division

**PAYROLL**

(For Contractor's Optional Use; See Instructions, Form WH-347 Inst.)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.



NAME OF CONTRACTOR     OR SUBCONTRACTOR     ADDRESS  
 PAYROLL NO. \_\_\_\_\_ PROJECT AND LOCATION \_\_\_\_\_ PROJECT OR CONTRACT NO. \_\_\_\_\_  
 OMB No: 1215-0149 Expires: 09/30/2000

(1) NAME, ADDRESS, AND SOCIAL SECURITY NUMBER OF EMPLOYEE	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	(4) DAY AND DATE			(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS			(9) NET WAGES PAID FOR WEEK	
			MON	TUE	WED				THUR	FRI	SAT		SUN

We estimate that it will take an average of 56 minutes to complete this collection of information, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection of information, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, ESA, U.S. Department of Labor, Room 33502, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

FORM WH-347, Revised May, 1996 — FORMERLY SOL 184 — PURCHASE THIS FORM DIRECTLY FROM THE SUPT. OF DOCUMENTS

23-B

### WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c149, §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 a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor or public body shall furnish to the Department of Labor & Industries 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

\_\_\_\_\_, 19\_\_\_\_\_

I, \_\_\_\_\_, \_\_\_\_\_

(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by \_\_\_\_\_ on the \_\_\_\_\_

(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature \_\_\_\_\_

Title \_\_\_\_\_

DEPARTMENT OF LABOR & INDUSTRIES, 100 CAMBRIDGE STREET, 11TH FL., BOSTON, MA. 02202

**CITY OF WALTHAM, MASSACHUSETTS  
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM  
CONTRACT COMPLIANCE**

NOTIFICATION TO ALL FIRMS

If your firm is awarded this federally-funded Contract by the City of Waltham, you are responsible for certain obligations and responsibilities under Executive Order 11246 and the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant Program regulations. You must complete the following forms which will be provided to you at the Pre-Construction meeting before you will be permitted to begin the work under this Contract. Full compliance with all regulations is absolutely necessary to complete your responsibilities under this Contract.

Required forms and plans to be provided at the Pre-Construction meeting:

1. Section 3 Certification
2. Section 3 Plan:
  - a. For firm which anticipates additional employee hirings
  - b. For firm which does not anticipate additional employee hirings
3. Certification Regarding Minority Business Entrepreneurship
4. Massachusetts Weekly Payroll Records Report & Statement of Compliance
5. Copeland Anti-Kickback Act Certification
6. Contractor's Weekly Workforce Utilization Report
7. Federal Payroll Form (WH-347)

**NOTE:** Instructions for completing these forms will be provided at the Pre-Construction meeting.

**FURTHERMORE:**

1. Project wage determinations are effective for only the dates listed on the Determination. You must pay project employees the correct wage based on the applicable time period.
2. Workers on this Contract must be paid the higher of the State or Federal wage rates based on the enclosed Determination sheets.
3. The Contractor is responsible for the satisfactory submission of all forms and plans by all subcontractors.
4. The City of Waltham will issue a Notice to Proceed when all required documents, certifications, and plans have been executed. Do not begin work on this Contract until you have received this notice.
5. Payment on this Contract cannot and will not be made until all documents have been satisfactorily completed and signed and kept current.

**Please contact the following if there are any questions:**

**Purchasing Department  
City of Waltham  
610 Main Street  
Waltham, MA 02451  
(781) 314-3244**

## PRECONSTRUCTION CONFERENCE AGENDA

**OBJECTIVE:** To discuss with contractors and subcontractors the following:

- ◇ City and Federal requirements involved in construction projects
- ◇ Lines of communication, supervision, and reporting
- ◇ Technical aspects of the project
- ◇ Project schedule

### **I. Federal Labor Standards**

Requirement that the contractors pay all workers at rates not less than the prevailing wages for similar construction work in the locality as determined by the U.S. Department of Labor.

Federal and State Labor Standards and Wage determinations are included in the contract document. The contractor must pay the higher of the two standards.

Compliance Activities:

- ◇ Completion of Contractor and Subcontractor Certifications (Labor Standards)
- ◇ Submission of weekly payroll forms (WH-347)
- ◇ Posting of wage rates and labor standards
- ◇ Employee interviews performed by the City

### **II. Equal Employment Opportunity Requirements**

Requirements that the contractor take affirmative action to prevent discrimination in employment.

Compliance Activities:

- ◇ Submission of Monthly Employment Utilization Report (CC-257)
- ◇ Massachusetts EEO Plan Certificates
- ◇ Certifications regarding Minority Business Entrepreneurship

### **III. Section 3 Requirements**

Requirements that opportunities for training and employment be given to lower income residents of the municipality and that contracts for work in connection with the project be awarded to local businesses.

Compliance Activities:

- ◇ Completion of a Section 3 Plan before work starts
- ◇ Completion of Section 3 Compliance Reports if hiring new employees or subcontracting for work in connection with this project
- ◇ Observe Section 3 Clause
- ◇ Impose Section 3 requirements on all lower tier contractors

41 CFR CHAPTER 60  
EQUAL OPPORTUNITY CLAUSE

1. In accord with Executive Order 11246, Section 202, the following is made a part of this contract.

During the performance of this Contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of the nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract for understanding, a notice, to be provided by the Contract Compliance Officer, advising the labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor or the Secretary of Housing and Urban Development pursuant thereto, and will permit access to his books, records, and accounts by the Secretary of Housing and Urban Development, and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regular orders, this Contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor or as otherwise provided by law.
7. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraph (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Local Public Agency or the Department of Housing and Urban Development may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Local Public Agency or the Department of Housing and Urban Development, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**AFFIRMATIVE ACTION PROGRAM COMPLIANCE****COMMUNITY DEVELOPMENT BLOCK GRANT  
NOTIFICATION TO ALL FIRMS**

The U.S. Department of Labor, Office of Federal Contract Compliance Programs (OFCCP), pursuant to Executive Order 11246, as amended, requires that each contractor/subcontractor, with 50 or more employees and with a contract award of **\$50,000** or more, have an acceptable and written Affirmative Action Program (AAP) on file. The content of this AAP should be in accordance with either the Equal Employment Opportunity Commission (EEOC) Guidelines, as promulgated in the Federal Register (Friday, January 19, 1979, Part IX) or "Revised Order No. 4" (41 CFR, Chapter 60, Part 60-2.)

It is the City of Waltham's responsibility to assure that the contractor/subcontractor has such a Program on file, and that s/he is therefore in compliance with Executive Order 11246. The City of Waltham is not, at any time or in any capacity, responsible for the documentation or implementation of this AAP, and it is not in its nature to provide direct support for the creation of an AAP. However, the City will serve in an advisory capacity, and as such, will offer consultative advice in order to aid the contractor/subcontractor with his/her development of an adequate and responsible AAP. The total commitment for determining the acceptability of this AAP lies with the contractor/subcontractor and the appropriate division of the OFCCP. (Boston: 617-565-2055)

## ENTREPRENEURSHIP AND LOCAL OPPORTUNITY PROVISIONS

### A. SECTION 3 - REQUIREMENTS: INSTRUCTIONS TO BIDDERS

#### 1. Policy

The Department of Housing and Urban Development (HUD) requires that any contract let under the Community Development Block Grant Program comply with the regulations of 24 CFR 135 and Section 3 of the Housing and Urban Development Act of 1968, 12 U.S.C. 1701 u. These regulations state that preference must be given in employment and training opportunities and in orders and contracts to be let to lower income project area residents and eligible Section 3 business, respectively.

The City maintains an affirmative posture as regards employment opportunities for low-moderate income residents in connection with Community Development Program sponsored projects and encourages the hiring of such persons for new trainee, apprentice or regular positions which may become available as a result of such projects. In addition, the City maintains a similarly affirmative posture as regards opportunities to eligible businesses regarding project-related work.

Each contractor and subcontractor must make a good faith effort to meet these same objectives with regard to both business and employment opportunities in connection with Community Development Program sponsored work.

#### 2. Bidding Procedure

All bidders should carefully read the following Section 3 requirements and Section 3 clause and be aware of the filing and reporting procedures contained therein.

The successful bidder, after contract award and prior to contract execution, will be required to submit a Section 3 Plan.

The Section 3 Plan will include:

- ◆ A preliminary statement of workforce needs, outlining goals for utilization of lower income project area residents.
- ◆ An Affirmative Action Plan for Section 3 businesses outlining goals for award of subcontracts to eligible Section 3 businesses.

This same procedure will apply to any subcontract awarded as a result of the receipt of this contract. No subcontract can be awarded unless the subcontractor's Section 3 Plan has been approved by the City.

The City of Waltham has available standard Section 3 Plans which may be modified by the successful bidder for submission to meet Section 3 requirements. For further information regarding Section 3, contact the City of Waltham Planning Department, 617/893-4040 ext. 3000.



3. Definitions

For your information, the following definitions, under Section 3, will be used by the successful bidder.

a. "Project Area" means the entire geographic area of the City of Waltham.

b. "Section 3 Resident" means:

(1) a public housing resident or

(2) a Waltham resident who is a low income person, i.e. having a household income in the past 12 months of **less than the limits in the following table:**

<b>Household Size:</b>	1 Person	2 Person	3 Person	4 Person	5 Person	6 Person	7 Person	8 Person
<b>Low Income Threshold:</b>	\$46,300	\$52,950	\$59,550	\$66,150	\$63,000	\$76,450	\$82,050	\$87,350

c. "Section 3 Business Concern" means a business concern:

(1) that is 51 percent or more owned by Section 3 residents; or

(2) whose permanent, full-time employees include persons, at least 30 percent of whom are currently Section 3 residents, or within three years of the date of first employment with the business concern were Section 3 residents; or

(3) that provides evidence of a commitment to subcontract in excess of 25% of the dollar award of all subcontracts to be awarded to business concerns that meet the qualifications set forth in (1) or (2) in this definition of Section 3 Business Concern.

4. Contract Compliance

The contractor and all subcontractors shall be monitored under Section 3 requirements through compliance reports submitted to the Director of Planning. Failure to make a good faith effort to implement this Section 3 Plan may result in termination for cause of the Contract.

5. Certification as a Lower-Income Person

The Contractor and all Subcontractors are required to maintain a list of qualified lower-income persons who apply for work with your business as a result of award of this contract. It is your responsibility to determine if such an applicant for employment does in fact qualify as a lower-income person residing in the project area.

6. Section 3 Clause

The following Section 3 Clause is incorporated as part of this contract, and the contractor agrees to comply with all provisions therein as applicable.

B. "SECTION 3 CLAUSE"

1. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development within the Project Area designated as the City of Waltham and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968 as amended, 12 U.S.C. 170 u. Section 3 requires that to the greatest extent feasible, opportunities for training and employment be given lower income residents of the project be awarded to and that contracts for work in connection with the project be awarded to business concerns which are located in or owned in substantial part by persons residing in the area of the projects. For purposes of this clause, a lower income person means a resident of the City of Waltham whose family income does not exceed \$41,600 (Family of Four).
2. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this contract. The parties to this contract certify and agree that they are under not contractual or other disability which would prevent them from complying with these requirements.
3. The contractor will send to each labor organization or representative or workers with which he has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment for training.
4. The contractor will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of federal Financial assistance take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the Secretary of

Housing and Urban Development, 24 CFR 135. The contractor will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

5. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors, and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR 135.

## CONTRACTORS' AGREEMENT

1. In accord with Executive Order 11246 Section 301 the following is included and hereby made a part of this contract.
  1. Each contractor having a contract containing the provisions prescribed in Section 202 shall file, and shall cause each of his subcontractors to file, Compliance Reports with the contracting agency or Secretary of Labor as may be directed. Compliance Reports shall be filed within such times and shall contain such information as to the practices, policies, programs and employment policies, programs, and employment statistics of the contractor and each subcontractor, and shall be in such form, as the Secretary of Labor may prescribe.
  2. Bidders or prospective contractors or subcontractors may be required to state whether they have participated in any previous contract subject to the provisions of this Order, or any preceding similar Executive Order, and in that event to submit, on behalf of themselves and their proposed subcontractors, Compliance Reports prior to or as an initial part of their bid or negotiation of a contract.
  3. Whenever the contractor or subcontractor has a collective bargaining agreement or other contract or understanding with a labor union or an agency referring workers or providing or supervising apprenticeship or training for such workers, the Compliance Report shall include such information as to such labor union's or agency's practices and policies affecting compliance as the Secretary of Labor may prescribe: Provided, That to the extent such information is within the exclusive possession of a labor union or an agency referring workers or providing or supervising apprenticeship or training and such labor union or agency shall refuse to furnish such information to the contractor, the contractor shall so certify to the contracting agency as part of its Compliance Report and shall set forth what efforts he has made to obtain such information.
  4. The contracting agency or Secretary of Labor may direct that any bidder or prospective contractor or subcontractor shall submit, as part of his Compliance Report, a statement in writing, signed by an authorized officer or agent on behalf of any labor union or any agency referring workers or providing or supervising apprenticeship or other training, with which the bidder or prospective contractor deals, with supporting information, to the effect that the signer's practices and policies do not discriminate on the grounds of race, color, religion, sex or national origin, and that the signer either will affirmatively cooperate in the implementation of the policy and provisions of this order or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under the proposed contract shall be in accordance with the purposes and provisions of the order. In the event that the union, or the agency shall refuse to execute such a statement, the Compliance Report shall so certify and set forth what efforts have been made to secure such a statement and such additional factual material as the contracting agency or the Secretary of Labor may require.

#### 14. FEDERAL LABOR STANDARDS PROVISIONS

##### A. Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

##### B. Minimum Wages

1. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cost equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed, The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

2. Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- The work to be performed by the classification requested is not performed by a classification in the wage determination; and
  - The classification is utilized in the area by the construction industry; and
  - The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
3. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)
  4. In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
  5. The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (B)(2) or (3) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
    - (a) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
    - (b) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations, under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

C. Withholding

HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or City of Waltham, take such action as may be necessary to cause the suspension of any further payment advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

D. Payrolls and Basic Records

1. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof of the types described in Section 1 (b)(2)(B) of the Davis Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the cost anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant,

sponsor, or City of Waltham, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(1). This information

may be submitted in any form desired. Optional Form WH-347 is available for this purpose and May be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

(Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

2. Each payroll submitted shall be accompanied by a Statement of Compliance, signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
  - (a) That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5 (a)(3)(I) and that such information is correct and complete;
  - (b) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
  - (c) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
3. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the Statement of Compliance required by paragraph D(2) of this section.
4. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.
5. The contractor or subcontractor shall make the records required under paragraph D(1) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or City of Waltham, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.
6. Apprentices and Trainees. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment



and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a state Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

7. Trainees.

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan

approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraw approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- G. **Equal Employment Opportunity**  
The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- H. **Compliance with Copeland Act Requirements**  
The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.
- I. **Subcontractors**  
The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.
- J. **Contract termination; debarment**  
A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- K. **Compliance with Davis-Bacon and Related Act Requirements**  
All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- L. **Disputes concerning labor standards**  
Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.
- M. **Certification of Eligibility**
  - 1. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-

Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

2. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.3.
  3. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., Federal Housing Administration transactions provides in part: "Whoever, for the purpose of... influencing in any way the action of such Administration...makes, utters or publishes any statement knowing the same to be false... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."
- N. **Complaints, Proceedings, or Testimony by Employees**  
No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified, or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.
- O. **Contract Work Hours and Safety Standards Act**  
As used in this paragraph, the terms laborers and mechanics include watchmen and guards.
1. **Overtime requirements**  
No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek in any contract in an amount in excess of \$100,000.
  2. **Violation; liability for unpaid wages; liquidated damages** In the event of any violation of the clause set forth in subparagraph P(1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages.

In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph P(1) of this paragraph, in the sum of \$10 for each calendar day which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph P(1) of this paragraph.

3. **Withholding for unpaid wages and liquidated damages**  
HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph P(2) of this paragraph.
  4. **Subcontracts**  
The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph P(1) through P(4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs P(1) through P(4) of this paragraph.
  5. **Health and Safety**
    - A. No laborer or mechanic shall be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
    - B. The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).
    - C. The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.
15. **CLEAN AIR AND WATER POLLUTION CONTROL ACTS**  
The contractor shall comply with all applicable standards, orders, or requirements issued under the Federal Water Pollution Control Act (33 USC 1251 et seq.) the Clean Air Act (42 USC 1857 et seq.), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Parts 15 and 61) including the following requirements:
- A. The Contractor warrants that any facility utilized in the performance of this agreement is not listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20 as of the date of contract award.
  - B. The Contractor will comply with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said sections and all regulations and guidelines issued thereunder.

- C. The Contractor agrees that as a condition for the award of this contract he will notify the City of Waltham of the receipt of any communication from the Assistant Administrator of EPA that a facility to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities; and will make any such notification promptly prior to contract award.
- D. The Contractor will include or cause to be included the criteria and requirements in paragraphs (A) through (D) of this article in every non-exempt subcontract and will take such action as the United States Government or its agencies may direct as a means of enforcing such provisions.

**Federal Equal Employment Opportunity & Affirmative Action**

**BIDDER'S CERTIFICATION**

The undersigned Bidder hereby certifies s/he will comply with all federal Equal Employment Opportunity and Affirmative Action regulations contained in this Contract.

The Contractor receiving the award of the contract shall be required to obtain from each of its subcontractors a copy of this certification and submit it to the contracting agency prior to the award of such subcontract.

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Signature of the Bidder

Date

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Title

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Name of the firm

**COPELAND ANTI-KICKBACK ACT\* CERTIFICATION**  
 (18 U.S.C. S74)  
 Department of Labor regulations (29 CFR, Subtitle A, Part 3)

This Act provides that each contractor or subgrantee shall be prohibited from inducing, by any means, any person employed in this construction, completion or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The recipient shall report all suspected or reported violations to the federal sponsoring agency.

The undersigned contractor agrees to comply with the Copeland Anti-Kickback Act:

Representative:

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Firm:

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Address:

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\* **Copies of the Copeland Anti-Kickback Act can be obtained by contacting:**  
 Planning Department (781) 314-3370  
 Government Center  
 119 School Street  
 Waltham, MA 02451

### **ACCESSIBILITY TO RECORDS**

The City of Waltham, the Federal Grantor Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor which are directly pertinent to a specific grant program for the purpose of making an audit, examination, excerpts, and transcriptions.

The Contractor (Contract in excess of **\$100,000**) shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act of 1970 (42 U.S.C. 1857 et. seq.) and the Federal Water Pollution Act (33 U.S.C. 1251 et. seq.) as amended. Violations shall be reported to the Grantor Agency and the Regional Office of the Environmental Protection Agency.



**INSURANCE REQUIREMENTS**

The Grantee shall provide the City with a Certificate of Insurance in an amount of \$1,000,000.00 or greater, covering General Liability including Bodily Injury, Property Damage, and Personal Injury. The City shall be named as an additional insured on this certificate.

The Grantee shall attach the Certificate of Insurance to this Agreement at the time of contract execution and thereafter shall submit a new certificate on the annual anniversary date.

**INDEMNIFICATION CLAUSE**

The Grantee shall indemnify, hold harmless, and defend the City and its departments, officers, employees, servants, and agents from and against all actions, causes of actions, claims, demands, damages, costs, loss of services, expenses and compensation, including attorney's fees and interest arising out of or resulting directly from the services rendered pursuant to this Grant Agreement, provided that any such action, cause of action, claim, demand, damage, cost, loss of service, expense, compensation (1) in any way grows out of bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, which (2) is caused in whole or in part by any act or omission of the Grantee, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

I hereby certify that I am the Clerk/Secretary of: \_\_\_\_\_; and that

**(Print name of corporation)**

\_\_\_\_\_ is the duly elected

**(Print name of officer who signs the contract)**

\_\_\_\_\_ of said corporation; and that

**(Print title of officer who signs the contract)**

on \_\_\_\_\_ at a duly authorized meeting of the Board of Directors

**(insert date of meeting)** \* This date must be on or before the date of the contract and the date the corporate officer signs

of said corporation, at which all the Directors were present or waived notice, it was voted that

\_\_\_\_\_ of this

**(Print name and title of officer who signs the contract)**

Corporation be and hereby is authorized to execute contracts and bonds in the name and on behalf of said

Corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this Corporation's name on its behalf, with or without the Corporate Seal, shall be valid and binding upon this

Corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

ATTEST: \_\_\_\_\_

**(signature of Clerk/Secretary)**

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

**(printed or typed name of Clerk/Secretary)**

DATE: \_\_\_\_\_

**(insert date Certificate signed by Clerk/Secretary)\*\*** This date must be on or after the date that the corporate officer signs the contract

**List of Officers of the Board of Directors/Trustees**

Names	Titles
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**List of Board of Directors/Trustees**

Names:

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Pursuant to Massachusetts General Laws Chapter 62C Section 49A, I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all Massachusetts tax returns and paid all Massachusetts taxes required under law. \*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Contractor (Agency)

\_\_\_\_\_  
Federal Identification Number  
or Social Security Number

\_\_\_\_\_  
Date

\*Legislation enacted by the Commonwealth of Massachusetts, effective July 1, 1983, requires that all contractors doing business with municipalities sign the above Attestation.

**PERFORMANCE BOND  
CITY OF WALTHAM, MA**

**Fitch Spray Park Construction**

KNOW ALL MEN BY THESE PRESENT THAT,

\_\_\_\_\_ as

principal and \_\_\_\_\_ as surety, are held and firmly bound unto the CITY OF WALTHAM and to such persons, firms, and corporations, who may furnish materials for or perform labor on the work, construction or improvements contemplated in the Contract hereinafter mentioned, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, in the

SUM OF \_\_\_\_\_ DOLLARS  
(\$ \_\_\_\_\_)

(lawful money of the United States of America) for the payment whereof the Contractor and the Surety of Sureties bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that is the above burden

\_\_\_\_\_ heirs, executors, administrators and assigns, shall faithfully perform the Contract WALTHAM: FITCH SPRAY PARK CONSTRUCTION, on his part and during the life of any guaranty or warranty, for defective materials and workmanship required under this Contract, and satisfy all claims and demands incurred for the same; and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of failure so to do, and shall fully reimburse and repay the City all outlay and expense which the City may incur in making good any such default, and shall promptly make payment to all persons supplying labor or materials for use in the prosecution of the work provided for in said Contract; and shall indemnify and save harmless the said City, its officers and agents from any and all suits or claims for injury or damage to persons or property resulting from or arising our of the work done under this Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that (except as to the City) no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after two years from the day on which the final payment under the Contract falls due.

AND PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the City of any extension of time for the performance of the Contract, or any other forbearance on the part of either the City or the Contractor to the other, shall not in any way release the Contractor and the Surety of Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such alterations, assignment, transfer, subletting extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who may have any suits or claims for injury or damage to persons or property resulting from or arising our of

the work done under this Contract, and they and each of them are hereby made obliges hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed hereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such changes, extension of time, alteration or addition to the terms of the Contract or to the work, or to the Specifications.

IN WITNESS WHEREOF, said Contractor and Surety have hereunto set their respective names this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

WITNESSES:

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(CONTRACTOR) (SEAL)

ADDRESS \_\_\_\_\_  
(SIGNATURE AND TITLE)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(SURETY) (SEAL)

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
(SIGNATURE AND TITLE)

(ATTORNEY-IN-FACT)

POWER OF ATTORNEY

Attorneys-in-fact who sign bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

**PAYMENT BOND**

CITY OF WALTHAM, MA

**Fitch Spray Park Construction**

KNOW ALL MEN BY THESE PRESENT THAT,

\_\_\_\_\_ a  
s principal and \_\_\_\_\_ as  
surety, are held and firmly bound unto the CITY OF WALTHAM and to such persons, firms, and  
corporations, who may furnish materials for or perform labor on the work, construction or  
improvements contemplated in the Contract hereinafter mentioned, or who may have any suits or  
claims for injury or damage to persons or property resulting from or arising out of the work done under  
this Contract,

in the SUM OF \_\_\_\_\_ DOLLARS  
(\$ \_\_\_\_\_) (lawful money of the United States of America) for the payment whereof  
the Contractor and the Surety of Sureties bind themselves and their heirs, executors, administrators,  
successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that is the above burden

\_\_\_\_\_  
\_\_\_\_\_  
heirs, executors, administrators and assigns, shall promptly make payment to all persons, firms,  
subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the  
work provided for in the WALTHAM: FITCH SPRAY PARK CONSTRUCTION and any authorized extensions  
or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke,  
repairs on machinery, equipment and tools consumed or used in connection with the construction of  
such work, and all insurance premiums on said work, and for all labor performed in such work, whether  
by subcontractors or otherwise, then this obligation shall be void; otherwise to remain in full force and  
effect.

PROVIDED, HOWEVER, that (except as to the City) no suit, action or proceeding by reason or any default  
whatever shall be brought on this Bond after two years from the day on which the final payment under  
the Contract falls due.

AND PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to  
be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the  
City of any extension of time for the performance of the Contract, or any other forbearance on the part  
of either the City or the Contractor to the other, shall not in any way release the Contractor and the  
Surety of Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns  
from their liability hereunder, notice to the Surety or Sureties of any such alterations, assignment,  
transfer, subletting extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish  
materials, or perform any labor for or on account of said work, construction or improvements, or who  
may have any suits or claims for injury or damage to persons or property resulting from or arising our of

the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed hereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such changes, extension of time, alteration or addition to the terms of the Contract or to the work, or to the Specifications.

IN WITNESS WHEREOF, said Contractor and Surety have hereunto set their respective names this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WITNESSES:

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(CONTRACTOR) (SEAL)

ADDRESS \_\_\_\_\_  
(SIGNATURE AND TITLE)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
(SURETY) (SEAL)

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
(SIGNATURE AND TITLE)

(ATTORNEY-IN-FACT)

POWER OF ATTORNEY

Attorneys-in-fact who sign bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

**Certification Regarding Lobbying**

The undersigned certifies, to the best of his or her knowledge and belief, that:

- A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.
- B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- C. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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Signed (Contractor)

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Title/Firm

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Date





DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development

GEORGE E. NOEL  
Director of Labor

HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

### Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

Classification	Effective Dates and Total Rates								
<b>Construction</b>									
(2 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$45.530	06/01/2011	\$46.280	12/01/2011	\$46.940			
	06/01/2012	\$47.590	12/01/2012	\$48.620					
(3 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$45.600	06/01/2011	\$46.350	12/01/2011	\$47.010			
	06/01/2012	\$47.660	12/01/2012	\$48.690					
(4 & 5 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$45.720	06/01/2011	\$46.470	12/01/2011	\$47.130			
	06/01/2012	\$47.780	12/01/2012	\$48.810					
ADS/SUBMERSIBLE PILOT	08/01/2010	\$103.680	08/01/2011	\$107.800					
AIR TRACK OPERATOR	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100			
ASBESTOS REMOVER - PIPE / MECH. EQUIPT.	12/01/2009	\$40.250							
ASPHALT RAKER	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600			
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE	12/01/2010	\$60.980							
BACKHOE/FRONT-END LOADER	12/01/2010	\$60.980							
BARCO-TYPE JUMPING TAMPER	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600			
BLOCK PAVER, RAMMER / CURB SETTER	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100			
BOILER MAKER	01/01/2010	\$55.850							
APPRENTICE: BOILERMAKER - Local 29									
Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	65.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00
Apprentice wages shall be no less than the following:									
Step 1 \$42.66/2\$42.66/3\$44.54/4\$46.43/5\$48.31/6\$50.20/7\$52.08/8\$53.97									
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	03/01/2011	\$70.900	08/01/2011	\$73.000	02/01/2012	\$73.990			
APPRENTICE: BRICK/PLASTER/CEMENT MASON - Local 3 Waltham									
Ratio	Step	1	2	3	4	5			
1:5	%	50.00	60.00	70.00	80.00	90.00			
Apprentice wages shall be no less than the following:									
Step 1 \$48.30/2\$52.82/3\$57.34/4\$61.86/5\$66.38									
BULLDOZER/GRADER/SCRAPER	12/01/2010	\$60.630							
CAISSON & UNDERPINNING BOTTOM MAN	12/01/2010	\$50.250	06/01/2011	\$51.250	12/01/2011	\$52.500			
CAISSON & UNDERPINNING LABORER	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350			
CAISSON & UNDERPINNING TOP MAN	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350			
CARBIDE CORE DRILL OPERATOR	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600			
CARPENTER	03/01/2011	\$56.230	09/01/2011	\$57.360	03/01/2012	\$58.480			
APPRENTICE: CARPENTER - Zone 2 Eastern MA									
Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	50.00	60.00	70.00	75.00	80.00	80.00	90.00	90.00
Apprentice wages shall be no less than the following:									
Step 1 \$26.27/2\$29.47/3\$41.91/4\$43.51/5\$46.68/6\$46.68/7\$51.46/8\$50.87									

This wage schedule must be posted at the work site in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at www.mass.gov/dos/pw or at 617-626-6952.



DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
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JOANNE F. GOLDSTEIN  
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**Prevailing Wage Rates**

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

Classification	Effective Dates and Total Rates					
CEMENT MASONRY/PLASTERING	02/01/2011	\$69.070	08/01/2011	\$70.770	02/01/2012	\$71.540
CHAIN SAW OPERATOR	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	12/01/2010	\$61.980				
COMPRESSOR OPERATOR	12/01/2010	\$49.690				
DELEADER (BRIDGE)	01/01/2011	\$64.410	07/01/2011	\$65.410	01/01/2012	\$66.410
	07/01/2012	\$67.410	01/01/2013	\$68.410		
APPRENTICE: PAINTER Local 35 - BRIDGES/TANKS						
Ratio	Step	1	2	3	4	5
1:1	%	50.00	55.00	60.00	65.00	70.00
Apprentice wages shall be no less than the following:			Steps are 750 hrs.			
Step 1 \$29.31/2 \$36.86/3 \$39.01/4 \$41.16/5 \$51.51/6 \$53.66/7 \$55.81/8 \$60.11						
DEMO: ADZEMAN	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
DEMO: BACKHOE/LOADER/HAMMER OPERATOR	12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350
APPRENTICE: LABORER Demo Backhoe/Loader/Hammer Operator						
Ratio	Step	1	2	3	4	
1:5	%	60.00	70.00	80.00	90.00	
Apprentice wages shall be no less than the following:						
Step 1 \$37.48/2 \$40.64/3 \$43.79/4 \$46.95						
DEMO: BURNERS	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100
APPRENTICE: LABORER Demo Burners						
Ratio	Step	1	2	3	4	
1:5	%	60.00	70.00	80.00	90.00	
Apprentice Wages shall be no less than the following:						
Step 1 \$37.33/2 \$40.46/3 \$43.59/4 \$46.72						
DEMO: CONCRETE CUTTER/SAWYER	12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350
DEMO: JACKHAMMER OPERATOR	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100
DEMO: WRECKING LABORER	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
APPRENTICE: LABORER Demo Wrecking Laborer						
Ratio	Step	1	2	3	4	
1:5	%	60.00	70.00	80.00	90.00	
Apprentice wages shall be no less than the following:						
Step 1 \$36.88/2 \$39.94/3 \$42.99/4 \$46.05						
DIRECTIONAL DRILL MACHINE OPERATOR	12/01/2010	\$60.630				
DIVER	08/01/2010	\$77.520	08/01/2011	\$80.270		
DIVER TENDER	08/01/2010	\$62.570	08/01/2011	\$65.320		
DIVER TENDER (EFFLUENT)	08/01/2010	\$81.250	08/01/2011	\$85.380		
DIVER/SLURRY (EFFLUENT)	08/01/2010	\$103.680	08/01/2011	\$107.800		
ELECTRICIAN	03/01/2011	\$68.290				

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**Prevailing Wage Rates**

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

**Classification**

**Effective Dates and Total Rates**

APPRENTICE: ELECTRICIAN - Local 103											
Ratio	Step	1	2	3	4	5	6	7	8	9	10
2:3***	%	40.00	40.00	45.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00
Apprentice wages shall be no less than the following Steps:						App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80					
1\$37.38/2\$37.38/3\$44.81/4\$44.81/5\$46.95/6\$49.08/7\$51.22/8\$53.35/9\$55.49/10\$57.62											
ELEVATOR CONSTRUCTOR						01/01/2011	\$66.690	01/01/2012	\$68.190		
APPRENTICE: ELEVATOR CONSTRUCTOR - Local 4											
Ratio	Step	1	2	3	4	5					
1:1	%	50.00	55.00	65.00	70.00	80.00					
Apprentice rates shall be no less than the following:						Steps 1-2 are 6 mos.; Steps 3-5 are 1 year					
Step 1\$34.26/2\$43.76/3\$48.86/4\$51.41/5\$56.50											
ELEVATOR CONSTRUCTOR HELPER						01/01/2011	\$52.830	01/01/2012	\$54.330		
FENCE & GUARD RAIL ERECTOR						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
FIELD ENG. - INST. PERSON (BLDG, SITE, HVY CONST)						11/01/2010	\$58.140	05/01/2011	\$59.380		
FIELD ENG. - ROD PERSON (BLDG, SITE, HVY CONST)						11/01/2010	\$42.200	05/01/2011	\$42.930		
FIELD ENG.-CHIEF OF PARTY (BLDG, SITE, HVY CONST)						11/01/2010	\$59.520	05/01/2011	\$60.770		
FIRE ALARM INSTALLER						03/01/2011	\$68.290				
FIRE ALARM REPAIR / MAINTENANCE						03/01/2011	\$56.300				
FIREMAN (ASST. ENGINEER)						12/01/2010	\$54.840				
FLAGGER & SIGNALER						12/01/2010	\$38.050	06/01/2011	\$39.050	12/01/2011	\$39.050
FLOORCOVERER						03/01/2011	\$61.110	09/01/2011	\$62.360	03/01/2012	\$63.610
APPRENTICE: FLOORCOVERER - Local 2168 Zone 1											
Ratio	Step	1	2	3	4	5	6	7	8		
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00		
Apprentice rates shall be no less than the following:						Steps are 750 hrs.					
Step 1\$28.38/2\$30.17/3\$41.41/4\$43.20/5\$46.78/6\$48.57/7\$52.15/8\$53.95											
FORK LIFT/CHERRY PICKER						12/01/2010	\$60.980				
GENERATOR/LIGHTING PLANT/HEATERS						12/01/2010	\$49.690				
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)						01/01/2011	\$53.910	07/01/2011	\$54.910	01/01/2012	\$55.910
						07/01/2012	\$56.910	01/01/2013	\$57.910		
APPRENTICE: GLAZIER - Local 35 Zone 2											
Ratio	Step	1	2	3	4	5	6	7	8		
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:						Steps are 750 hrs.					
Step 1\$24.06/2\$31.08/3\$32.71/4\$34.33/5\$44.16/6\$45.78/7\$47.41/8\$50.66											
HOISTING ENGINEER/CRANES/GRADALLS						12/01/2010	\$60.980				

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**Prevailing Wage Rates**

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

**Classification** **Effective Dates and Total Rates**

APPRENTICE: HOIST/PORT. ENG.- Local 4											
Ratio	Step	1	2	3	4	5	6	7	8		
1:6	%	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00		
Apprentice wages shall be no less than the following:											
Step 1\$31.33/2\$45.47/3\$47.41/4\$49.35/5\$51.29/6\$53.22/7\$55.16/8\$57.10											
HVAC (DUCTWORK)						02/01/2011	\$65.170	08/01/2011	\$66.420	02/01/2012	\$67.670
						08/01/2012	\$68.920	02/01/2013	\$70.170		
HVAC (ELECTRICAL CONTROLS)						03/01/2011	\$68.290				
HVAC (TESTING AND BALANCING - AIR)						02/01/2011	\$65.170	08/01/2011	\$66.420	02/01/2012	\$67.670
						08/01/2012	\$68.920	02/01/2013	\$70.170		
HVAC (TESTING AND BALANCING -WATER)						09/01/2010	\$68.730				
HVAC MECHANIC						09/01/2010	\$68.730				
HYDRAULIC DRILLS						12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100
INSULATOR (PIPES & TANKS)						09/01/2010	\$61.660				
APPRENTICE: ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston											
Ratio	Step	1	2	3	4						
1:4	%	50.00	60.00	70.00	80.00						
Apprentice wages shall be no less than the following:											
Step 1\$37.34/2\$42.20/3\$47.07/4\$51.93											
Steps are 1 year											
IRONWORKER/WELDER						03/16/2010	\$60.940				
APPRENTICE: IRONWORKER - Local 7 Boston											
Ratio	Step	1	2	3	4	5	6				
**	%	60.00	70.00	75.00	80.00	85.00	90.00				
Apprentice wages shall be no less than the following:											
** Structural 1:6; Ornamental 1:4											
Step 1\$46.82/2\$50.35/3\$52.12/4\$53.88/5\$55.65/6\$57.41											
JACKHAMMER & PAVING BREAKER OPERATOR						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
LABORER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
APPRENTICE: LABORER - Zone 1											
Ratio	Step	1	2	3	4						
1:5	%	60.00	70.00	80.00	90.00						
Apprentice wages shall be no less than the following:											
Step 1\$36.88/2\$39.94/3\$42.99/4\$46.05											
LABORER: CARPENTER TENDER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
LABORER: CEMENT FINISHER TENDER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
LABORER: MASON TENDER						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
LABORER: MULTI-TRADE TENDER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
LABORER: TREE REMOVER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350

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### Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

#### Classification

#### Effective Dates and Total Rates

This classification applies to the wholesale removal of standing trees including all associated trimming of branches and limbs, and applies to the removal of branches at locations not on or around utility lines.

LASER BEAM OPERATOR	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
MARBLE & TILE FINISHERS	03/01/2011	\$59.270	08/01/2011	\$60.950	02/01/2012	\$61.740

APPRENTICE: MARBLE & TILE FINISHER - Local 3 Marble & Tile

Ratio	Step	1	2	3	4	5
1:3	%	50.00	60.00	70.00	80.00	90.00

Apprentice wages shall be no less than the following:

Steps are 800 hrs.

Step 1\$41.98/2\$45.43/3\$48.89/4\$52.35/5\$55.81

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	03/01/2011	\$70.940	08/01/2011	\$73.040	02/01/2012	\$74.030
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APPRENTICE: MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Ratio	Step	1	2	3	4	5
1:3	%	50.00	60.00	70.00	80.00	90.00

Apprentice wages shall be no less than the following:

Step 1\$48.32/2\$52.84/3\$57.37/4\$61.89/5\$66.42

MECH. SWEEPER OPERATOR (NON-CONSTRUCTION)	07/01/2010	\$29.590	07/01/2011	\$30.290
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MECH. SWEEPER OPERATOR (ON CONST. SITES)	12/01/2010	\$60.630
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MECHANICS MAINTENANCE	12/01/2010	\$60.630
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MILLWRIGHT (Zone 1)	10/01/2010	\$56.720
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APPRENTICE: MILLWRIGHT - Local 1121 Zone 1

Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00

Apprentice wages shall be no less than the following:

Step 1\$36.24/2\$37.91/3\$41.07/4\$42.75/5\$45.17/6\$46.85/7\$49.27/8\$50.94

MORTAR MIXER	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
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OILER (OTHER THAN TRUCK CRANES, GRADALLS)	12/01/2010	\$43.170
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OILER (TRUCK CRANES, GRADALLS)	12/01/2010	\$46.330
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OTHER POWER DRIVEN EQUIPMENT - CLASS II	12/01/2010	\$60.630
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PAINTER (BRIDGES/TANKS)	01/01/2011	\$64.410	07/01/2011	\$65.410	01/01/2012	\$66.410
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	07/01/2012	\$67.410	01/01/2013	\$68.410
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APPRENTICE: PAINTER Local 35 - BRIDGES/TANKS

Ratio	Step	1	2	3	4	5	6	7	8
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00

Apprentice wages shall be no less than the following:

Steps are 750 hrs.

Step 1\$29.31/2\$36.86/3\$39.01/4\$41.16/5\$51.51/6\$53.66/7\$55.81/8\$60.11

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2011	\$55.310	07/01/2011	\$56.310	01/01/2012	\$57.310
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* If 30% or more of surfaces to be painted are new construction,	07/01/2012	\$58.310	01/01/2013	\$59.310
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NEW paint rate shall be used.

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**Prevailing Wage Rates**

As determined by the Commissioner under the provisions of the  
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**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

**Classification**

**Effective Dates and Total Rates**

APPRENTICE: PAINTER Local 35 Zone 2 - Spray/Sandblast - New										
Ratio	Step	1	2	3	4	5	6	7	8	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00	
Apprentice wages shall be no less than the following:										
Step 1\$24.76/2\$31.85/3\$33.55/4\$35.24/5\$46.83/7\$48.53/8\$51.92										
PAINTER (SPRAY OR SANDBLAST, REPAINT)					01/01/2011	\$53.370	07/01/2011	\$54.370	01/01/2012	\$55.370
					07/01/2012	\$56.370	01/01/2013	\$57.370		
APPRENTICE: PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint										
Ratio	Step	1	2	3	4	5	6	7	8	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00	
Apprentice wages shall be no less than the following:										
Step 1\$23.79/2\$30.78/3\$32.38/4\$33.98/5\$43.78/6\$45.38/7\$46.98/8\$50.17										
PAINTER (TRAFFIC MARKINGS)					12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
PAINTER / TAPER (BRUSH, NEW) *					01/01/2011	\$53.910	07/01/2011	\$54.910	01/01/2012	\$55.910
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.					07/01/2012	\$56.910	01/01/2013	\$57.910		
APPRENTICE: PAINTER - Local 35 Zone 2 - BRUSH NEW										
Ratio	Step	1	2	3	4	5	6	7	8	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00	
Apprentice wages shall be no less than the following:										
Step 1\$24.06/2\$31.08/3\$32.71/4\$34.33/5\$44.16/6\$45.78/7\$47.41/8\$50.66										
PAINTER / TAPER (BRUSH, REPAINT)					01/01/2011	\$51.970	07/01/2011	\$52.970	01/01/2012	\$53.970
					07/01/2012	\$54.970	01/01/2013	\$55.970		
APPRENTICE: PAINTER Local 35 Zone 2 - BRUSH REPAINT										
Ratio	Step	1	2	3	4	5	6	7	8	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00	
Apprentice wages shall be no less than the following:										
Step 1\$23.09/2\$30.01/3\$31.54/4\$33.07/5\$42.80/6\$44.33/7\$45.86/8\$48.91										
PANEL & PICKUP TRUCKS DRIVER					12/01/2010	\$45.360	06/01/2011	\$46.110	12/01/2011	\$46.770
					06/01/2012	\$47.420	12/01/2012	\$48.450		
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)					08/01/2010	\$62.570	08/01/2011	\$65.320		
PILE DRIVER					08/01/2010	\$62.570	08/01/2011	\$65.320		
APPRENTICE: PILE DRIVER - Local 56 Zone 1										
Ratio	Step	1	2	3	4	5	6	7	8	
1:3	%	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	
Apprentice wages shall be no less than the following:										
Step 1\$47.62/2\$49.49/3\$51.36/4\$53.23/5\$55.10/6\$56.96/7\$58.83/8\$60.70										
PIPEFITTER & STEAMFITTER					09/01/2010	\$68.730				

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**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

**Classification**

**Effective Dates and Total Rates**

APPRENTICE: PIPEFITTER - Local 537										
Ratio	Step	1	2	3	4	5				
**	%	40.00	45.00	60.00	70.00	80.00				
Apprentice Rates-Step1\$33.44/2\$43.38/3\$50.29/4\$54.90/5\$59.51			** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.							
Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)										
PIPELAYER					12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
PLUMBERS & GASFITTERS					03/01/2011	\$67.500	09/01/2011	\$68.250	03/01/2012	\$69.050
					09/01/2012	\$70.300	03/01/2013	\$71.550		
APPRENTICE: PLUMBER - Local 12										
Ratio	Step	1	2	3	4	5				
**	%	35.00	40.00	55.00	65.00	75.00				
Apprentice wages shall be no less than the following:			** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr							
Step 1\$30.01/2\$32.89/3\$41.54/4\$47.31/ 4w/lic\$50.20 /5\$53.09/ 5w/lic\$55.98										
PNEUMATIC CONTROLS (TEMP.)					09/01/2010	\$68.730				
PNEUMATIC DRILL/TOOL OPERATOR					12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
POWDERMAN & BLASTER					12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350
POWER SHOVEL/DERRICK/TRENCHING MACHINE					12/01/2010	\$60.980				
PUMP OPERATOR (CONCRETE)					12/01/2010	\$60.980				
PUMP OPERATOR (DEWATERING, OTHER)					12/01/2010	\$49.690				
READY-MIX CONCRETE DRIVER					05/01/2010	\$41.080	05/01/2011	\$41.690		
RECLAIMERS					12/01/2010	\$60.630				
RESIDENTIAL WOOD FRAME CARPENTER **					04/01/2009	\$35.620				
** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement.										
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.										
APPRENTICE: CARPENTER (Residential Wood Frame) - Zone 2										
Ratio	Step	1	2	3	4	5	6	7	8	
1:5	%	60.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	
Apprentice wages shall be no less than the following:			Step 1\$20.13/2\$26.04/3\$27.23/4\$28.43/5\$29.63/6\$30.83/7\$32.03/8\$33.22							
RIDE-ON MOTORIZED BUGGY OPERATOR					12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
ROLLER/SPREADER/MULCHING MACHINE					12/01/2010	\$60.630				
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg)					02/01/2011	\$54.860	08/01/2011	\$55.860	02/01/2012	\$56.860
					08/01/2012	\$57.860	02/01/2013	\$58.860		
APPRENTICE: ROOFER - Local 33										
Ratio	Step	1	2	3	4	5				
**	%	50.00	60.00	65.00	75.00	85.00				
** 1:5; 2:6-10, the 1:10; Reroofing: 1:4, then 1:1			Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.							
Apprentice rates no less than: Step 1\$30.41/2\$40.64/3\$42.41/4\$45.97/5\$49.53										

**This wage schedule must be posted at the work site in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at www.mass.gov/dos/pw or at 617-626-6952.**



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**Prevailing Wage Rates**

**As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H**

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

Classification	Effective Dates and Total Rates											
ROOFER SLATE / TILE / PRECAST CONCRETE	02/01/2011	\$55.110	08/01/2011	\$56.110	02/01/2012	\$57.110	08/01/2012	\$58.110	02/01/2013	\$59.110		
APPRENTICE: ROOFER (Slate/Tile/Precast Concrete) - Local 33												
Ratio Step	1	2	3	4	5							
** %	50.00	60.00	65.00	75.00	85.00							
Apprentices wages shall be paid no less than the following:												
Step 1\$30.54/2\$40.79/3\$42.58/4\$46.16/5\$49.74												
SHEETMETAL WORKER	02/01/2011	\$65.170	08/01/2011	\$66.420	02/01/2012	\$67.670	08/01/2012	\$68.920	02/01/2013	\$70.170		
APPRENTICE: SHEET METAL WORKER - Local 17-A												
Ratio Step	1	2	3	4	5	6	7					
1:4 %	40.00	45.00	50.00	60.00	65.00	75.00	85.00					
Apprentice wages shall be no less than the following: Steps 1-3 are 1 year; Steps 4-7 are 6 mos.												
Step 1\$28.86/2\$34.49/3\$37.38/4\$42.38/5\$45.01/6\$50.27/7\$55.03												
SIGN ERECTOR	06/01/2009	\$37.780										
APPRENTICE: SIGN ERECTOR - Local 35 Zone 2												
Ratio Step	1	2	3	4	5	6	7	8	9			
1:1 %	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00			
Apprentice wages shall be no less than the following: Steps are 4 mos.												
Step 1\$19.48/2\$23.12/3\$24.36/4\$25.60/5\$30.34/6\$31.58/7\$32.82/8\$34.06/9\$35.30												
SPECIALIZED EARTH MOVING EQUIP < 35 TONS	12/01/2010	\$45.820	06/01/2011	\$46.570	12/01/2011	\$47.230	06/01/2012	\$47.880	12/01/2012	\$48.910		
SPECIALIZED EARTH MOVING EQUIP > 35 TONS	12/01/2010	\$46.110	06/01/2011	\$46.860	12/01/2011	\$47.520	06/01/2012	\$48.170	12/01/2012	\$49.200		
SPRINKLER FITTER	01/01/2011	\$70.550	09/01/2011	\$71.350	01/01/2012	\$71.500	03/01/2012	\$72.250	09/01/2012	\$73.250	01/01/2013	\$73.400
APPRENTICE: SPRINKLER FITTER - Local 550												
Ratio Step	1	2	3	4	5	6	7	8	9	10		
1:1 %	40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00		
Apprentice wages shall be no less than the following steps:												
1\$36.20/2\$38.75/3\$41.30/4\$43.85/5\$46.40/6\$48.95/7\$51.50/8\$54.05/9\$56.60/10\$59.15												
STEAM BOILER OPERATOR	12/01/2010	\$60.630										
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN	12/01/2010	\$60.630										
TELECOMMUNICATION TECHNICIAN	03/01/2011	\$56.300										

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### Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

#### Classification

#### Effective Dates and Total Rates

Classification	Effective Dates	Total Rates
APPRENTICE: TELECOMMUNICATION TECHNICIAN - Local 103		
Ratio Step 1 2 3 4 5 6 7 8		
1:1 % 40.00 45.00 50.00 55.00 60.00 65.00 75.00 80.00		
Apprentice wages shall be no less than the following:		
Step 1\$37.09/2\$38.69/3\$40.30/4\$41.89/5\$43.49/6\$45.10/7\$48.30/8\$49.90		
TERRAZZO FINISHERS	03/01/2011	\$69.840 08/01/2011 \$71.940 02/01/2012 \$72.930
APPRENTICE: TERRAZZO FINISHER - Local 3 Marble & Tile		
Ratio Step 1 2 3 4 5		
1:3 % 50.00 60.00 70.00 80.00 90.00		
Apprentice wages shall be no less than the following:		
Step 1\$47.77/2\$52.18/3\$56.60/4\$61.01/5\$65.43		
TEST BORING DRILLER	12/01/2010	\$50.500 06/01/2011 \$51.500 12/01/2011 \$52.750
TEST BORING DRILLER HELPER	12/01/2010	\$49.220 06/01/2011 \$50.220 12/01/2011 \$51.470
TEST BORING LABORER	12/01/2010	\$49.100 06/01/2011 \$50.100 12/01/2011 \$51.350
TRACTORS/PORTABLE STEAM GENERATORS	12/01/2010	\$60.630
TRAILERS FOR EARTH MOVING EQUIPMENT	12/01/2010	\$46.400 06/01/2011 \$47.150 12/01/2011 \$47.810
	06/01/2012	\$48.460 12/01/2012 \$49.490
TUNNEL WORK - COMPRESSED AIR	12/01/2010	\$61.680 06/01/2011 \$62.930 12/01/2011 \$64.180
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE)	12/01/2010	\$63.680 06/01/2011 \$64.930 12/01/2011 \$66.180
TUNNEL WORK - FREE AIR	12/01/2010	\$53.750 06/01/2011 \$55.000 12/01/2011 \$56.250
TUNNEL WORK - FREE AIR (HAZ. WASTE)	12/01/2010	\$55.750 06/01/2011 \$57.000 12/01/2011 \$58.250
VAC-HAUL	12/01/2010	\$45.820 06/01/2011 \$46.570 12/01/2011 \$47.230
	06/01/2012	\$47.880 12/01/2012 \$48.910
WAGON DRILL OPERATOR	12/01/2010	\$49.350 06/01/2011 \$50.350 12/01/2011 \$51.600
WASTE WATER PUMP OPERATOR	12/01/2010	\$60.980
WATER METER INSTALLER	03/01/2011	\$67.500 09/01/2011 \$68.250 03/01/2012 \$69.050
	09/01/2012	\$70.300 03/01/2013 \$71.550
<b>Outside Electrical - East</b>		
CABLE TECHNICIAN (Power Zone)	08/30/2010	\$34.050 08/29/2011 \$35.310
CABLEMAN (Underground Ducts & Cables)	08/30/2010	\$44.320 08/29/2011 \$46.110
DRIVER / GROUNDMAN CDL	08/30/2010	\$39.360 08/29/2011 \$40.830
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs)	08/30/2010	\$31.890 08/29/2011 \$33.050
EQUIPMENT OPERATOR (Class A CDL)	08/30/2010	\$48.320 08/29/2011 \$50.110
EQUIPMENT OPERATOR (Class B CDL)	08/30/2010	\$41.760 08/29/2011 \$43.340
GROUNDMAN	08/30/2010	\$31.390 08/29/2011 \$32.550
GROUNDMAN -Inexperienced (<2000 Hrs.)	08/30/2010	\$26.840 08/29/2011 \$27.790
JOURNEYMAN LINEMAN	08/30/2010	\$57.510 08/29/2011 \$59.620

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**Prevailing Wage Rates**

**As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H**

**Awarding Authority:** City of Waltham

**Contract Number:** 290.175.2010.8032

**City/Town:** WALTHAM

**Description of Work:** Fitch Spray Park Landscape Construction - Landscape contractors to build Spray park at 14 Ash Street In Waltham under the Rules of MGL Ch. 30-39M.

**Job Location:** 14 Ash Street, Waltham

**Classification Effective Dates and Total Rates**

APPRENTICE: LINEMAN (Outside Electrical) - East Local 104

Ratio	Step	1	2	3	4	5	6	7
1:2	%	60.00	65.00	70.00	75.00	80.00	85.00	90.00

Apprentice wages shall be no less than the following:

Step 1 \$34.59/2 \$36.99/3 \$39.65/4 \$42.30/5 \$44.95/6 \$47.61/7 \$50.76

TELEDATA CABLE SPLICER	03/01/2007	\$27.330
TELEDATA LINEMAN/EQUIPMENT OPERATOR	03/01/2007	\$27.330
TELEDATA WIREMAN/INSTALLER/TECHNICIAN	03/01/2007	\$27.330
TREE TRIMMER	02/01/2009	\$19.010
TREE TRIMMER GROUNDMAN	02/01/2009	\$17.060

This classification applies only to the trimming of branches on and around utility lines.

This classification applies only to the trimming of branches on and around utility lines.

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, Section 11.

All steps are six months (1000 hours) unless otherwise specified.

- \* Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof.
- \*\* Multiple ratios are listed in the comment field.
- \*\*\* The job site ratio of 2 apprentices (APP) for every 3 journeymen (JM) is allowed as follows:  
1 JM: 1 APP; 2-3 JM: 2 APP; 4-6 JM: 4 APP; 7-9 JM: 6 APP; 10-12 JM: 8 APP; 13-15 JM: 10 APP; etc.
- \*\*\*\* The job site ratio of 2 apprentices (APP) for every 3 journeymen (JM) is allowed as follows:  
1-2 JM: 1 APP; 3-4 JM: 2 APP; 5 JM: 3 APP; 6-7 JM: 4 APP; 8 JM: 5 APP; etc.

**This wage schedule must be posted at the work site in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.**



## SECTION 01010

## SUMMARY OF WORK

## PART 1- GENERAL

## 1.01 PROJECT DESCRIPTION

- A. The project is the Construction of Fitch Spray Park, 14 Ash Street, Waltham, MA 02453, as described in the Contract Documents.

## 1.02 WORK TO BE DONE

- A. The work of this Contract includes, but is not limited to:
1. Demolition and removal of existing wading pool and surrounding pavement.
  2. Removal of existing chain link fencing and resetting at a new location, with new gates.
  3. Furnishing and installation of new features including water spray elements and associated water, sewer and electrical lines and connections, controller, and backflow preventer, bituminous concrete paving, color coating of bituminous paving, shade shelters, benches, trash receptacles, planting and signage.
  4. Furnishing and installation of picnic tables on concrete pads (Add Alternate #1 - Refer to Section 01030-Alternates).
  5. Cleaning of existing concrete retaining wall (Add Alternate #2 - Refer to Section 01030-Alternates).

## 1.03 CONTRACT TIME

- A. The time for Substantial Completion of the work is 90 calendar days from the Contractor's receipt of the Notice to Proceed. The time for Final Completion of the work is **100** calendar days from the Contractor's receipt of the Notice to Proceed.
- B. The Contractor shall submit shop drawings, data and samples and place his/her order sufficiently early to permit consideration and approval by the Landscape Architect before materials are necessary for incorporation into the Work. Any delay resulting from the Contractor's failure to do so shall not be used as a basis of a claim against the Owner.

#### 1.04 CONTRACT DOCUMENTS

- A. The Contract Documents are enumerated in the Agreement, and include these Specifications and the Drawings, for the City of Waltham, by Carolyn Cooney & Associates, Landscape Architects, 13 Elm Street, Milford, MA 01757.

#### 1.05 INSPECTION OF THE SITE

- A. 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.

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

- A. The contractor will have full access to the site within the Contract Limit of Work Line.
- B. Vehicular access to the site will be limited to that available from Ash Street. Vehicular access through the existing abutting playground is not allowed.
- C. The Contractor, his/her Subcontractors, and their employees may park on the site inside the Contract Limit of Work Line, given that no such on-site parking interferes with the site work or causes damage.
- D. The Contractor shall furnish his/her own toilet facilities on-site.
- E. 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.
- F. The project site shall be kept clean and free from accumulation of waste material and debris.
  - 1. The Contractor, his/her Subcontractors, and their employees shall be respectful and courteous of the neighborhood while working on site.

#### 1.07 CITY OF WALTHAM NOISE ORDINANCE

- A. 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.

#### 1.08 ENCLOSURES

- A. 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.

#### 1.09 SAFETY AND SECURITY

- A. The Contractor shall be responsible for the safety and security of the site within the Contract Limit of Work Line and for the safety of all persons who enter within the Contract Limit of Work Line.
  - 1. Particular attention is called to the existing abutting playground and the necessity of preventing the access of children to the construction site.
- B. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions & programs in connection with the work. He/she shall promulgate safety regulations and shall notify the Owner of particular hazards.
- C. 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. By these and other necessary methods the Contractor shall stop unauthorized entry within the Contract Limit of Work Line.
- D. The Contractor shall cooperate with and maintain a close liaison with the 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.

END OF SECTION

## SECTION 01025

## MEASUREMENT AND PAYMENT

## PART 1- GENERAL

## 1.01 BASE BID &amp; ALTERNATES

## A. Measurement &amp; Payment

1. Measurement for payment for construction of Fitch Spray Park shall be on a lump-sum basis.
2. Payment of the lump-sum price under the Base Bid of the Proposal adjusted for accepted Alternates, shall fully compensate the Contractor for furnishing all labor, materials, equipment and incidentals required for work described in Section 01010, Summary of Work of this Specification.

## 1.02 PAYMENT PROCEDURES

- A. 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.
- B. Payment will be made in accordance with the requirements of Section 39K, M.G.L.
- C. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  1. List of subcontractors.
  2. Schedule of Values.
  3. Contractor's Construction Schedule (preliminary if not final).
  4. Products list.
  5. Submittals Schedule (preliminary if not final).
  6. Copies of permits.
  7. Initial progress report.
  8. Certificates of insurance and insurance policies.
- D. Refer to Section 01700 - Project Close-out for additional requirements for payments at Substantial Completion and Final Completion.

## 1.03 ADDITIONAL WORK

- A. Additional Work, if any, shall be performed at a mutually satisfactory price agreed upon between the Contractor and the Owner through the process described in Section 01028 - Change Order Procedure.

END OF SECTION

## SECTION 01028

## CHANGE ORDER PROCEDURE

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. Attention is directed to Attachment A and D of the Contract, concerning Change Orders. All Change Orders must be signed and approved by the Chief Procurement Officer and the City Auditor prior to execution of the Work.

## 1.02 SCOPE OF WORK

- A. Work included: Make such changes in the Work, in the Contract Sum, in the Contract Time of Completion, or any combination thereof, as are described in written Change Orders signed by the Owner and issued after execution of the Contract, in accordance with the provisions of this Section.

## 1.03 SUBMITTALS

- A. Make submittals directly to the Landscape Architect at the address shown on the Project Manual.
- B. Prepare in accordance with change order format in Appendix A of the Contract.

## 1.04 PRODUCT HANDLING

- A. Maintain a "Register of Proposal Requests and Change Orders" at the job Site, accurately reflecting current status of all pertinent data.
- B. Make the Register available to the Landscape Architect/Engineer for review at his/her request.

## 1.05 CHANGES INITIATED BY THE OWNER

- A. Should the City contemplate making a change in the Work or a change in the Contract Time of Completion, the Landscape Architect will issue a "Proposal Request" to the Contractor.
  - 1. Proposal Requests will be dated and will be numbered in sequence.
  - 2. The Proposal Request will describe the contemplated change, and will carry one of the following instructions to the Contractor:
    - (a) Make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion.
    - (b) Make the described change in the Work, credit or cost for which will be determined in accordance with pertinent paragraphs of



## Appendix D Change Orders.

### 1.06 CHANGES INITIATED BY THE CONTRACTOR

- A. Should the Contractor discover a discrepancy among the Contract Documents, a concealed condition, or other cause for suggesting a change in the Work, a change in the Contact Sum, or a change in the Contact Time of Completion, he shall notify the Landscape Architect.
- B. Upon agreement by the Landscape Architect that there is reasonable cause to consider the Contractor's proposed change, the Landscape Architect will issue a Proposal Request in accordance with the provisions described in Article 1.05 above.

### 1.07 PROCESSING PROPOSAL REQUESTS

- A. In response to each Request for Proposal, the Contractor shall:
  - 1. Submit to the Landscape Architect for review one copy of completed Change Order Form (Appendix A of the Contract).
  - 2. Meet with the Landscape Architect as required to explain costs and, when appropriate, determine other acceptable ways to achieve the desired objective.
  - 3. Alert pertinent personnel and subcontractors as to the impending change and, to the maximum extent possible, avoid such work as would increase the Owner's cost for making the change, advising the Landscape Architect in writing when such avoidance no longer is practicable.
- B. Upon the signature of the Chief Procurement Officer and the City Auditor, the Landscape Architect will issue a "Change Order" to the Contractor.

### 1.08 CHANGE ORDERS

- A. Change Orders will be dated and will be numbered in sequence.
- B. The Change Order will describe the change or changes and will refer to the Proposal Request(s) involved.
- C. The Landscape Architect will issue four copies of each Change Order to the Contractor.
  - 1. The Contractor promptly shall sign all four copies and return three copies to the Landscape Architect.

END OF SECTION

## SECTION 01030

### ALTERNATES

#### PART 1- GENERAL

##### 1.01 GENERAL PROVISIONS

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

##### 1.02 ALTERNATE BIDS

- A. General Bidders shall insert in the space provided on the bid forms the amounts to be added to their respective Base Bids for the following Alternates. Each proposal amount shall include the entire cost of the alternate portion of the work including overhead, profit, and other costs to furnish and install the alternate complete-in-place, including the cost of interfacing and coordinating the alternate with related and adjacent work. All work shall be done in conformance with the relevant plans, specifications, and details. The following Alternates are ADD ALTERNATES, which if accepted by the Owner, shall directly increase the Contractor's base bid contract price and lump sum bid.

#### **ADD ALTERNATE NO. 1:**

Furnish and Install two (2) picnic tables, and (1) one trash receptacle with associated concrete pads, paving, and footings, as shown on the Drawings, and as specified in Section 02800 Site Furnishings, in lieu of mulch, weed barrier and planting soil for the area of concrete pads and pavement.

#### **ADD ALTERNATE NO. 2:**

Clean existing retaining wall as specified in Section 03750 Wall Cleaning and shown on the Drawings.

END OF SECTION

## SECTION 01040

## CONTROL OF WORK

## PART 1 - GENERAL

## I. GENERAL PROVISIONS

- A. 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.

## II. PLANT

- A. The Contractor shall furnish plant and equipment which will be efficient, appropriate, and of sufficient quantity to secure a satisfactory quality of work and a rate of progress which will insure the completion of the Work within the time stipulated in the Contract Documents. If at any time such plant 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 the plant and 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.

## III. PROJECT MANAGEMENT

- A. 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.
- B. Prior to the start of work, the Contractor shall submit a Progress Schedule in a bar chart form at the preconstruction meeting to the Landscape Architect for completing the Work. See Section 01300 - Submittals of this Specification.
- C. 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.
- D. Hours of work for construction activities are limited to 8:00 AM to 4:00 PM Monday through Friday. Any changes to the work schedule must be authorized by the Landscape Architect and City Officials.
- E. All work areas shall be secured, and materials and equipment shall be removed at

the end of each work day.

- F. The Contractor shall retain on the Project during its progress, a competent full-time representative. This representative shall not be changed except with the consent of the Owner and Landscape Architect. The representative shall be in full charge of the Work and all instructions given to him shall be binding.

#### IV. CITY OF WALTHAM NOISE ORDINANCE

- A. 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. Permits to waive the noise ordinance must be approved and issued by the Chief of Police.

#### V. TRAFFIC POLICE

- A. 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 Landscape Architect for reimbursement. Payment for special duty police will be made to the Contractor at a dollar for dollar reimbursement. Said price and payment shall be full compensation for furnishing all special duty police.
- B. 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 Landscape Architect will accept no further requests for payment if police detail bills are more than 30 days in arrears.
  - 1. The estimated hourly cost for police detail is \$42.00 hourly for each officer; one-half day - \$168.00 per officer; and one full day - \$336.00 per officer. One-half day is the minimum charge per day.
- C. 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 Landscape Architect by the Contractor as proof of payment.

- D. 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.

## VI. SITE INVESTIGATION OF EXISTING CONDITIONS

- A. The Contractor acknowledges that he/she has satisfied him/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 reasonably 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 from the responsibility for estimating properly the difficulty or cost of successfully performing the Work.
- B. No claim for extra compensation or extension of time will be allowed due to the Contractor's failure to estimate properly the quantities, locations and measurements of all items required to complete the Work.
- C. Report any discrepancies to the Landscape Architect and request her/his interpretation.

## VII. PROTECTION OF WORK AREA

- A. The Contractor shall secure all work areas by 4:00 PM each work day.
- B. 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 and equipment left on-site.
- C. 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.

## VIII. LAWS AND REGULATIONS

- A. The Contractor shall keep himself 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.

- B. 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 Landscape Architect in writing. He/she shall at all times himself/herself 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.

#### 1.10 PERMITS AND CODES

- A. 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.
- B. 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.
- C. 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.
- D. The Contractor, under this Contract shall be responsible for providing and filing all Plans, Specifications and other documents, pay 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.
1. Fees for City of Waltham permits will be waived by the City.
- E. Comply also with applicable provisions of American National Standard Code for Building Construction ANSI A10.6.

#### 1.11 INSPECTION AND TESTS

- A. Testing shall be as specified in Section 01400-Quality Control.

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

#### 1.12 SANITARY REGULATIONS

- A. The Contractor 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 the Work, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work.
- B. 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.

#### 1.13 COORDINATION WITH UTILITIES

- A. The Contractor shall coordinate his/her Work with the utility companies to prevent damages or disruption to existing equipment and to coordinate new utility installations. The Contractor 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.
- B. The contractor 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 and communications companies to verify location of cables.
- C. All right-of-way and site utilities (water, sewer, drainage) shall be inspected and approved by the City Engineer's Office.
- D. Site information: No representations are made indicating subsurface conditions. It is expressly understood that the Owner/Landscape Architect will not be responsible for interpretations or conclusions drawn therefrom by the Contractor.

#### 1.14 FIRE PROTECTION

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

#### 1.15 CLEANUP

- A. During the course of the Work, the Contractor shall keep the Site in as clean and neat a condition as possible. He/she shall dispose of all residue 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.

END OF SECTION



## SECTION 01050

### FIELD ENGINEERING

#### PART 1 - GENERAL

##### 1.01 GENERAL PROVISIONS

- A. 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.
- B. Examine and coordinate all Contract Drawings and other section of the Specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract.

##### 1.02 SCOPE OF WORK

- A. The Work under this Section consists of field staking the horizontal and vertical alignment of all site improvements including but not limited to new utilities, fencing, shade shelters, benches, water spray features, paving, plantings, and elements of any accepted alternates.

##### 1.03 QUALIFICATIONS AND SUBMITTALS

- A. The Contractor shall engage the services of a Professional Engineer or Land Surveyor Registered in the Commonwealth of Massachusetts and shall submit the name, address, and registration number of such person or persons to the Landscape Architect in writing.

#### PART 2 - MATERIALS

##### 2.01 LAYOUT AND STAKING

- A. The Contractor shall be responsible for furnishing all stakes, pins, and grade markings as required to implement the work of layout and staking and shall make all field adjustments ordered by the Landscape Architect at no extra cost to the Owner.
- B. Upon request by the Landscape Architect, the Contractor shall make available to the Owner survey instruments necessary to check proposed vertical and horizontal alignments at no extra cost.

##### 2.02 UTILITY INVERTS

- A. The Contractor shall be responsible for furnishing all stakes, pins, and grade

markings as required to implement the work of utility inverts and shall make all field adjustments ordered by the Landscape Architect at no additional cost to the Owner.

### PART 3 - EXECUTION

#### 3.01 SURVEY LAYOUT

- A. The Contractor shall use the alignments shown on the Plans to obtain the alignment which shall be approved subject to field adjustments as ordered by the Landscape Architect.
- B. The Surveyor shall lay out the necessary grades and locations of utility structures, utility lines, shade structures, site furniture, paving, fencing, footings, water play features and all other proposed site improvements.
- C. The Contractor shall inform the Landscape Architect when the general layout is completed and shall not begin excavation until the various alignments are approved by the Landscape Architect. Any discrepancies encountered in field conditions shall be reported to the Landscape Architect immediately.
- D. The Contractor shall be responsible for maintaining the correct vertical and horizontal alignment of all elements, which responsibility shall not be waived by the Landscape Architect's approval of the basic layout and stakeout.

#### 3.02 UTILITY INVERTS AND LOCATIONS

- A. Prior to excavating trenches for utility work, the Registered Surveyor or Professional Engineer shall field verify all existing inverts and inform the Landscape Architect of any discrepancies. These shall be recorded on the Record Drawings required by Section 01700 - Project Close-out.
- B. The Registered Surveyor or Professional Engineer shall determine the as-built inverts and locations of new utilities and these shall be recorded on the Record Drawings required by Section 01700 - Project Close-out.

END OF SECTION

## SECTION 01200

### PROJECT MEETINGS

#### PART 1 - GENERAL

##### 1.01 GENERAL PROVISIONS

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

##### 1.02 SCOPE OF WORK

- A. Attend project meetings to enable orderly review during progress of the Work, and to provide for systematic discussion of problems, as long as deemed necessary by the Landscape Architect throughout the construction period.
- B. The Contractor's relations with his subcontractors and materials suppliers, and discussion relative thereto, are the Contractor's responsibility and normally are not part of Project Meetings content.

##### 1.03 QUALITY ASSURANCE

- A. For those persons designated by the Contractor to attend and participate in Project Meetings, provide required authority to commit the Contractor to solutions agreed upon in the Project Meetings.

##### 1.04 MEETING NOTES

- A. The Landscape Architect will compile minutes of each Project Meeting and furnish copies to the attendees, Contractor, and Owner before the next scheduled meeting.

#### PART 2 - NOT USED

#### PART 3 - EXECUTION

##### 3.01 PRECONSTRUCTION MEETING

- A. The Contractor shall arrange for a Preconstruction Meeting within 5 days after the award of contract, prior to commencing any work on site, in order to coordinate between him/herself, his/her Subcontractors, the Owner, and the Landscape Architect the procedures to be followed on the project.
- B. Contractor is to coordinate attendance by authorized representatives of the

Owner, the Contractor, site work subcontractors, and the Landscape Architect. Authorized representatives of the Owner include the City of Waltham Engineering Department, 119 School Street, Waltham, MA 02451-4596, (781) 314-3830.

- C. Minimum agenda: Data will be distributed and discussed on at least the following items:
1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers and Owner.
  2. Channels and procedures for communication.
  3. Construction schedule, including sequence of critical work.
  4. Contract Documents and revisions.
  5. Processing of Shop Drawings and other data submitted to the Owner for review, including the process for reviewing water, sewer and drainage submittals.
  6. Processing of Bulletins, field decisions, and Change Orders.
  7. Procedures for safety, first aid, security, quality control, housekeeping, and related matters.
  8. Submittal of Construction Fence layout.
  9. Submittal of Progress Schedule, Tabulation of Submittals and Schedule of Values.

### 3.02 PROJECT MEETINGS

- A. Frequency: Project Meeting shall in general be held at regular intervals not less frequently than once a week. Meetings will be chaired by the Landscape Architect.
- B. Location: Project meetings will be held at the job site.
- C. Attendance:
1. To the maximum extent practicable, assign the same person or persons to represent the Contractor at Project Meetings throughout the progress of the work.
  2. Site work subcontractors, material suppliers, and others may be invited to attend those Project Meetings in which their aspect of the Work is involved.
- D. Minimum Agenda:
1. Review progress of the Work since last meetings, including status of submittals for approval.

2. Identify problems which impede planned progress.
3. Develop corrective measures and procedures to regain planned schedule.
4. Complete other current business.

E. Revision to Minutes:

1. Unless published minutes are challenged in writing prior to the next regularly scheduled Project Meeting, they will be accepted as properly stating the activities and decisions of the meeting.
2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
3. Challenge to minutes shall be settled at the start of the next regularly scheduled meeting.

END OF SECTION

## SECTION 01300

### SUBMITTALS

#### PART 1- GENERAL

##### 1.01 GENERAL PROVISIONS

- A. 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.
- B. Consult the individual Sections of the Specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

##### 1.02 SCOPE OF WORK

- A. The scope of the work under this Specification section, without limiting the generality thereof, includes the furnishing of all labor material, equipment, services and incidentals necessary to complete all the work in accordance with the contract documents, which are intended to describe and provide for a finished piece of work.
- B. The type of work includes the following without limiting the generality thereof:
  - 1. Progress Schedules.
  - 2. Schedule of Values.
  - 3. Shop drawings.
  - 4. Product Data.
  - 5. Samples.

##### 1.03 QUALITY ASSURANCE

- A. Coordination of submittals:
  - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
  - 2. Verify that each item and the associated submittal conform in all respects with the specified requirements.
  - 3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
- B. Timeliness - The Contractor shall transmit each submittal to the Landscape Architect well in advance of performing related Work or other applicable

activities, so that the installation shall not be delayed by processing times, including disapproval and re-submittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. **Items such as, water spray equipment and site furnishings need to be submitted immediately.** No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Landscape Architect in advance of the Work.

1. Sequence - The Contractor shall transmit each submittal in a sequence which will not result in the approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.
- C. Contractor's Review and Approval - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Landscape Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To" or "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section or Drawing No. to which the submittal refers, purpose (first submittal, re-submittal), description, remarks, distribution record, and signature of transmitter.
- D. "Or-Equals", "or equal as approved" or "or approved equal" - On the transmittal, or on a separate sheet attached to the transmittal, the Contractor shall direct attention to any deviations including minor limitations and variations, from the Contract Documents. Do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by the Owner.
1. The Contractor and all Subcontractors shall submit to the Landscape Architect for consideration of any Or-Equal substitution, a written point by point comparison containing the name and full particulars of the proposed product to the product named or described in the Contract Documents.
  2. Such submittal shall in no event be made later than 30 calendar days prior to the incorporation of the item into the Work. In any case in which the time period specified in the Contract Documents from the Notice to Proceed to Substantial Completion is less than 30 days, this requirement can be waived by the Landscape Architect.
  3. Upon receipt of a written request for approval of an Or-Equal substitution, the Landscape Architect shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents. Upon conclusion of the investigation, the Landscape Architect shall promptly advise that the item is, or is not, considered acceptable as an Or-Equal substitution. Such written notice must have the

concurrence of the Owner.

4. In no case may an item be furnished on the Work other than the item named or described, unless the Landscape Architect, with the Authority's concurrence, shall consider the item equal to the item so named or described, as provided by M.G.L. c.30 § 39M.
  5. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Landscape Architect at the expense of the Contractor or Subcontractor submitting the substitution.
  6. The Landscape Architect and/or the Authority may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor or Subcontractor, as the case may be, shall bear full cost for providing, delivering, and disposal of all such samples.
  7. The Contractor or Subcontractor, as the case may be, shall assume full responsibility for the performance of any item submitted as an "Or-Equal" and assume the costs of any changes in any Work which may be due to such substitution.
- E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, handling, inspecting and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.
- F. Unless otherwise indicated on the Contract Drawings, or specified, only new materials and equipment shall be incorporated into the Work. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Owner. No materials shall be delivered to the work without prior approval of the Owner.
- G. By approving and submitting shop drawings, product data, and samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the contract documents.
- H. The inspection and approval by the Landscape Architect of shop drawings, product data, and samples is general and does not relieve the Contractor from responsibility for compliance with the requirements of the Contract or for proper dimensions, fitting, construction, and construction sequencing.
- I. The Contractor or Subcontractors shall not be relieved of responsibility for any deviation from the Contract Drawings or Specifications unless the Contractor has specifically informed the Landscape Architect in writing of such deviation, and



the Landscape Architect has given specific written approval thereof.

- J. The Contractor shall submit to the Landscape Architect data relating to materials and equipment he proposes to furnish for the Work. Such data shall be in sufficient detail to enable the Landscape Architect to identify the particular product and to form an opinion as to its conformity to the Specifications. Submittals shall, at minimum, include the following:
1. Name of Manufacturer.
  2. Dimensional requirements for the material.
  3. Class and/or type of material.
  4. Strength requirements for the material.
  5. Sieve analysis of fill materials.
  6. And any other information that is required in determining conformance of the submittal with the Specifications or the Contract Drawings.

#### 1.04 LANDSCAPE ARCHITECT'S ACTION

- A. The Landscape Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:
1. Final Unrestricted Release: Where marked "Approved" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.
  2. Final-But-Restricted Release: When marked "Approved as Noted" the Work may proceed provided it complies with the Landscape Architect's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend upon these compliances.
  3. Returned for Resubmittal: When marked "Revise & Resubmit" or "Disapproved", the Work covered by the submittal (purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay, in accordance with the Landscape Architect's notations stating the reasons for returning the submittal.

#### 1.05 PROGRESS SCHEDULES

- A. At the Preconstruction Meeting, the Contractor shall submit a progress schedule in bar chart form. Indicate a time bar for each major category or unit of work to be performed, properly sequenced and coordinated with other elements of the work.
- B. With the progress schedule, submit a tabulation of all submittals which will

clearly show: the submittal name and section, date to Landscape Architect for review, date required back to Contractor to maintain the orderly progress of the work, and those submittals required early because of long lead time for ordering, manufacture or fabrication. The Contractor shall submit shop drawings, data and samples or place his/her order sufficiently early to permit consideration and approval by the Landscape Architect before materials are necessary for incorporation into the Work. Any delay resulting from the Contractor's failure to do so shall not be used as a basis of a claim against the Owner.

- C. Monthly, as the job progresses, submit updates of the original progress schedule to show actual progress on the job and any revisions to the projected completion date.

#### 1.06 SCHEDULE OF VALUES

- A. With the progress schedule, submit a schedule of values on an AIA "Request for Payment" form which breaks down the contract price by specification sections. This schedule of values shall be in reasonable correspondence with the Contractor's actual costs for each Subcontract or trade, and it shall serve as the basis for the evaluation and approval of monthly requests for Payment as they are submitted.

#### 1.07 SHOP DRAWINGS

- A. Shop drawings shall be complete. Give all information necessary or requested in the individual section of the specifications. They shall also show adjoining Work and details of connection thereto.
- B. Shop drawings shall be for whole systems. Partial submissions will not be accepted.
- C. The Landscape Architect reserves the right to review and approve shop drawings only after approval of related product data and samples. Shop drawings for water, sewer, and drainage will require review by the City Engineer.
- D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Landscape Architect's stamp.
- E. The Contractor shall submit to the Landscape Architect one legible original and two copies of each shop drawing. Transparency and prints shall be mailed or delivered in roll form. Each submittal shall be accompanied by a transmittal notice.
- F. When the original is returned by the Landscape Architect with the stamp "Revise

and Resubmit” or “Disapproved”, the Contractor shall correct the original drawing or prepare a new drawing and resubmit the original and two copies thereof to the Landscape Architect for approval. This procedure shall be repeated until the Landscape Architect’s approval is obtained.

G. When the original is returned by the Landscape Architect with the stamp “Approved” or “Approved as Corrected”, the Contractor shall provide and distribute the copies for all Contractor and Subcontractors use, and in addition submit, within 10 calendar days after approval, 3 prints to the Landscape Architect.

H. The Contractor shall maintain one full set of approved shop drawings at the site.

#### 1.08 SUBMISSION OF PRODUCT DATA

A. The Contractor shall submit 6 copies of Product Data to the Landscape Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked in ink. Data of general nature will not be accepted.

B. Product Data shall be accompanied by a transmittal notice. The Contractor’s stamp of approval shall appear on the printed information itself, in a location which will not mar legibility.

C. Product Data returned by the Landscape Architect as “Disapproved” shall be resubmitted in 6 copies until the Landscape Architects approval is obtained.

D. When the Product Data are acceptable, the Landscape Architect will stamp them “Approved” or “Approved as Corrected,” retain 3 copies, and return 4 copies to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.

E. The Contractor shall maintain one full set of approved, original, Product Data at the site.

#### 1.09 SUBMISSION OF SAMPLES

A. Unless otherwise specified in the individual section, the Contractor shall submit two specimens of each sample.

B. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved in the Work.

C. Samples which can be conveniently mailed shall be sent directly to the Landscape

Architect, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.

- D. All other samples shall be delivered to the project site with sample identification tag attached and properly filled in. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed to the Landscape Architect.
- E. If a sample is rejected by the Landscape Architect, a new sample shall be resubmitted in a manner specified hereinabove. This procedure shall be repeated until the sample is approved by the Landscape Architect.
- F. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the Specifications.

END OF SECTION

## SECTION 01400

## QUALITY CONTROL

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

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

## 1.02 SCOPE OF WORK

- A. The scope of the work under this Specification section, without limiting the generality thereof, includes the furnishing of all labor, materials, equipment, services, and incidentals necessary to complete all of the work in accordance with the Contract Documents, which are intended to describe and provide for a finished piece of work.
- B. The work includes the following, without limiting the generality thereof;
  - 1. The Contractor shall be responsible for paying for compaction testing specified in Section 02200 - Earthwork.
  - 2. The Contractor shall make available to the Owner's testing laboratory any samples or specimens which the laboratory may require to perform quality control testing on concrete, fill materials, or other material as the Owner may elect to provide additional testing for.
  - 3. The coordinating and scheduling of work and the giving of timely notice so as to afford the Owner's testing laboratory the opportunity to take samples and make observations or tests.

## 1.03 TESTING LABORATORY

- A. The Owner will select, engage, and pay for the services of an independent testing laboratory to perform structural tests on concrete and such other materials as the Landscape Architect/Engineer may deem appropriate.
- B. Retesting of materials which fail the original test shall be paid for by the Contractor.

END OF SECTION

## SECTION 01500

### TEMPORARY FACILITIES & CONTROLS

#### PART 1- GENERAL

##### 1.01 GENERAL PROVISIONS

- A. 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.

##### 1.02 SCOPE OF WORK

- A. The scope of the work under this Specification section, without limiting the generality thereof, includes the furnishing of all labor, materials, equipment, services, and incidentals necessary to complete all of the work in accordance with the Contract Documents, which are intended to describe and provide for a finished piece of work.
- B. The work includes the following, without limiting the generality thereof;
  - 1. Temporary utilities.
  - 2. Field equipment.
  - 3. Barriers and enclosures.
  - 4. Safety and security.
  - 5. Project identification.

##### 1.03 TEMPORARY UTILITIES

- A. The Contractor is responsible for all temporary electrical distribution, lighting, and water distribution from existing sources.
- B. The Contractor shall provide and pay for his own temporary telephone service within the Contract Limit Line.
- C. The provision for temporary toilets is included under Section 01010 - Summary of Work.

##### 1.04 FIELD EQUIPMENT

- A. The Contractor shall provide a transit, rod and level on site for checking layouts and installations.

##### 1.05 TRAFFIC CONTROL

- A. Traffic police will be required for operations within City streets. Refer to Section 01040 - Control of the Work, Section 1.05 for police requirements and

cost.

#### 1.06 BARRIERS AND ENCLOSURES

- A. The Contractor shall provide and maintain sufficient fencing and warning signs around the work area to limit unauthorized entry within the Contract Limit Line.
- B. At the earliest practical time provide temporary enclosure of materials, equipment, work in progress and completed portions of the work to provide protection to the work and employees.

#### 1.07 SAFETY AND SECURITY

- A. The Contractor shall be responsible for the safety and security of the site within the Contract Limit Line, and for the safety of all persons who enter within the Contract Limit Line.
  - 1. Gates or other temporary openings in the fencing used to allow construction personnel or equipment access shall be maintained closed at all times to prevent access by the public.
  - 2. The Contractor shall provide signage, in locations as indicated on the Drawings and as described in Division 2 - Section 02100 - Site Preparation.
- B. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work.
- C. The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying the Owner of particular hazards.
- D. The Contractor shall cooperate with and maintain a close liaison with the Police Department and Fire Departments, and he shall abide by safety-related requests from any of these agencies.

#### 1.08 PROJECT IDENTIFICATION

- A. The Contractor shall furnish and install one (1) 4'-0" x 6'-0" project sign, as indicated, conforming to the City of Waltham requirements.
  - 1. Such sign shall be fabricated from:
    - (a) 1" thick MDO exterior plywood, laminated with waterproof glue. All edges of sign shall be banded with 1" x ½" pressure-treated

pine banding.

- B. Sign shall be supported by 2 - 4" x 4" D. F. post supports set in 12" diameter concrete footings to a depth of four feet so that sign is raised a minimum of 4' above grade, or attached securely to the existing chain link fence at specified mounting height. All nails, nuts, bolts and other connecting hardware shall be galvanized. (Note: Alternate methods of support may be required due to site conditions) The sign shall be lettered by a professional sign painter in accordance with the general layout provided. Submit shop drawing indicating sign construction, lettering, and wording. Wording shall be approved by the City of Waltham Planning Department.
- C. At completion of the project, remove and dispose of the sign, supports, and footings and completely refurbish the area.
- D. The City of Waltham shall direct the location of the sign.
- E. Contractor shall post all required project postings, including EEO poster, Notice to All Employees, and Davis-Bacon wage rates, on the back of the sign under a weatherproof transparent cover (visqueen, plastic, etc).
- F. Typeface for sign shall be Helvetica with letters not to exceed 4" high or less than 3-3/4" high. Information shall be all capital letters, all lines centered.
- G. Background paint shall be black; lettering shall be white.
- H. Graphics for the sign shall be as indicated on the following page.



## SECTION 01700

## PROJECT CLOSE-OUT

## PART 1- GENERAL

## 1.01 GENERAL PROVISIONS

- A. Attention is directed to the General Conditions of the Contract, all Divisions of the Specifications and the Drawings, all of which apply to this section.
- B. Project close-out procedures are subject to the requirements of M.G.L. Chapter 30, Section 39G, excerpted in Division 0, Section 00830.

## 1.02 SCOPE OF WORK

- A. The scope of work under this Specification section, without limiting the generality thereof, includes the furnishing of all labor, materials, equipment, services, incidentals necessary to complete all of the work in accordance with the Contract Documents, which are intended to describe and provide for a finished piece of work.
- B. The type of work includes the following, without limiting the generality thereof:
  - 1. Final Cleaning.
  - 2. Substantial Completion
  - 3. Recording as-built information and coordination with others to produce final As-Built Drawings.
  - 4. Work and coordination with others to set granite property bounds.
  - 5. Warranties.
  - 6. Operating and Maintenance Manuals: Provide one copy to City of Waltham Recreation Department and one copy to City of Waltham Engineering Department, Water/Sewer Division.
  - 7. Final Completion.

## 1.03 FINAL CLEANING

- A. Immediately prior to Substantial Completion of the work, the Contractor shall perform all cleanup work as follows:
  - 1. Remove all waste materials and rubbish from the site and legally dispose of it.
  - 2. Remove all tools, equipment, machinery, surplus material, temporary enclosures, and any other material belonging to the Contractor or his Subcontractors.

3. Clean all surfaces, fixtures, and equipment within the work areas, and any surfaces outside the work area which have been made dirty by the work of the contract. Leave the entire site clean and ready for use.

#### 1.04 SUBSTANTIAL COMPLETION

- A. Related Requirements: The Contractor's attention is directed to the General and Supplementary Conditions of the Contract and M.G.L. Chapter 30, Section 39G for additional information covering substantial completion procedures and payments.
  1. Substantial Completion is defined in MGL 149 Section 39G, excerpts of which are included in Attachment B, Section 00830 of Division 0.
- B. Upon Substantial Completion of the project, the Contractor shall present written certification that the work is substantially complete. The Landscape Architect will promptly, and in no case later than 21 days after the Contractor's certification, respond in writing declaring the work has reached Substantial Completion, or he shall provide an itemized list of incomplete or unsatisfactory items that must be completed to achieve Substantial Completion.
- C. Within 65 days after the effective date of a declaration of substantial completion, the Landscape Architect will send the Contractor a Substantial Completion estimate, which will be the balance of the Contract price minus a one percent retention for final completion, amounts to cover any outstanding claims, any amounts estimated to cover incomplete or unsatisfactory work, and the sum of all demands for direct payment made by Subcontractors.
  1. Refer to MGL 149 Section 39G for additional information concerning payment, excerpted in Division 0, Section 00830-B.

#### 1.05 AS-BUILT RECORD DRAWINGS

- A. General: Do not use As-Built Record Drawings for construction purposes. Protect As-Built Record Drawings from deterioration and loss. Provide access to As-Built Record Drawings for Architect's and Owner's reference during normal working hours.
  1. As-Built Record Drawings: Maintain and submit one set of black-line white prints of As-Built Record Contract Drawings and Shop Drawings.
    - (a) Mark As-Built Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, Subcontractor, or similar entity, to prepare the marked-up

### As-Built Record Prints.

- (1) Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
  - (2) Accurately record information in an understandable drawing technique.
  - (3) Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  - (4) Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
- (b) Mark as-built record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
- (c) Mark important additional information that was either shown schematically or omitted from original Drawings.
- (d) Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
- (e) Identify and date each As-Built Record Drawing; include the designation "PROJECT AS-BUILT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
- (a) Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - (b) Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - (c) Note related Change Orders, As-Built Drawings, and Product Data, where applicable.
3. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

- (a) Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
- (b) Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
- (c) Note related Change Orders, As-Built Drawings, and Record Specifications, where applicable.

#### 1.06 DIGITAL ELECTRONIC AUTOCAD AS-BUILT RECORD DRAWINGS

- A. At the completion of the project, Alpha Surveying and Engineering, 695 Wareham Street, Middleboro, MA 02346 Tel 508-295-5505, Fax 508-295-5535 will survey the site and provide digital electronic Autocad as-built drawings to the Owner.
- B. The Contractor shall be responsible for coordinating with Alpha Surveying and Engineering and providing to Alpha Surveying and Engineering a copy of the Contractor's as-built record set of plans.
- C. The provision by others of the final as-built electronic plans does not relieve in any way the responsibility of the Contractor to maintain record drawings as described in 1.05, throughout the progress of the project, with special attention to . the locations of any underground elements not able to easily be located by above ground survey, including locations of underground utilities installed or modified.

#### 1.07 GRANITE PROPERTY BOUNDS

- A. At the end of the project, four (4) 6" x 6" granite property bounds will be furnished and installed by Others, namely, Alpha Engineering, 695 Wareham Street, Middleboro, MA 02346, Tel 508-295-5505, Fax 508-295-5535. The Contractor shall be responsible for coordination of this work with Others.
- B. The Contractor shall also be responsible for saw-cutting, removing and replacing sidewalk concrete in-kind at the property line corners where necessary to allow installation of these granite bounds by Others, including repairing any damage to pedestrian curb ramp at the corner of Crescent and Ash Streets.

#### 1.08 WARRANTIES

- A. Submittal Time: Submit written warranties on request of the Landscape Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
  - 1. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

- (a) Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  - (b) Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - (c) Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
2. Provide additional copies of each warranty to include in operation and maintenance manuals. At Substantial Completion of the project, the Contractor shall deliver to the Landscape Architect copies of all warranties for the various materials and pieces of equipment included in the project. These warranties shall be submitted in duplicate and shall be bound together with the operating and maintenance data called for above.

#### 1.09 OPERATION AND MAINTENANCE MANUALS

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
  1. Operation Data:
    - (a) Emergency instructions and procedures.
    - (b) System, subsystem, and equipment descriptions, including operating standards.
    - (c) Operating procedures, including startup, shutdown, seasonal, and weekend operations.
    - (d) Description of controls and sequence of operations.
    - (e) Piping diagrams.
  2. Maintenance Data:
    - (a) Manufacturer's information, including list of spare parts.
    - (b) Name, address, and telephone number of Installer or supplier.
    - (c) Maintenance procedures.
    - (d) Maintenance and service schedules for preventive and routine maintenance.
    - (e) Maintenance record forms.
    - (f) Sources of spare parts and maintenance materials.
    - (g) Copies of maintenance service agreements.

- (h) Copies of warranties and bonds.
- B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

#### 1.010 FINAL COMPLETION

- A. Related Requirements: The Contractor's attention is directed to the General and Supplementary Conditions of the Contract and M.G.L. Chapter 30, Section 39G covering closeout and final payment procedures.
- B. Final Completion:
  - 1. Within fifteen (15) days of the effective declaration of Substantial Completion, the Landscape Architect will send the Contractor by certified mail, return receipt requested, a complete final punch list of all incomplete or unsatisfactory work items necessary to achieve Final Completion.
    - (1) If the Contractor fails to complete such work within forty-five (45) days after receipt of the list, or by the contractual completion date, whichever is later, the awarding authority may, subsequent to seven (7) days written notice to the Contractor, terminate the Contract and complete the incomplete or unsatisfactory work items and charge the cost of same to the Contractor.
  - 2. The Contractor shall notify the Landscape Architect when the work is completed. The Landscape Architect will promptly make an inspection, and in no case later than thirty (30) days after notification by the Contractor that the work is complete, send the Contractor a final estimate for the Contract balance due, holding back any amount estimated to cover work which is still incomplete or unsatisfactory.
  - 3. Upon completion of all remaining items, and after receipt of all appropriate Record Specifications, Record Product Data, Operating and Maintenance Manuals, Warranties, Guarantees and any Spare Parts as required by the Contract Documents, the Contractor shall provide a notarized Contractor's Certificate and Release and a final Application for Payment to the Owner to complete the close-out process.

END OF SECTION

## SECTION 02100

### SITE PREPARATION AND DEMOLITION

#### PART 1 - GENERAL

##### 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Contact Dig-Safe (1-888-344-7233) seventy-two hours prior to the start of any removals or excavation work, and obtain a Certificate verifying that marking the location of utilities has been completed. Contact the City of Waltham Engineer to verify the location of additional on-site utilities. Coordinate demolition work with utility companies. Dig-safe does not locate telephone and cable lines; contact the specific utilities involved for this information.

##### 1.02 SCOPE OF WORK

- A. Provide all equipment and do all work necessary to prepare the site complete, as indicated on the Drawings and as specified.
- B. The work shall include, but is not limited to, the following:
  - 1. Marking the location of utilities within the Limit of Work Line.
  - 2. Preparation of existing lawn areas for new planting.
  - 3. Demolition of existing wading pool.
  - 4. Cutting and capping existing water service.
  - 5. Removal of existing drainline.
  - 6. Cutting and plugging of drainline.
  - 7. Removal of portions of existing chain link fence and stockpiling salvaged items for reuse.
  - 8. Removal and stockpiling for re-use one set of gates, and removal and disposal of a second set of gates, as indicated on the drawings.
  - 9. Removal of existing concrete paving and bituminous paving.
  - 10. Saw cutting portions of existing bituminous paving and concrete paving at existing paving to remain.
  - 11. Removal and resetting of granite curbing as necessary for installation of utilities and vehicular curb cut, including replacement of curbing damaged by the Contractor.
  - 12. Removal and disposal of existing benches and footings.
  - 13. Removal of incidental site items not indicated on the site plan which will impede proposed construction.

14. Protection of existing site elements to remain including concrete retaining wall and portion of chain link fence to remain.

#### 1.03 RELATED WORK

- A. Section 01050 - Field Engineering: Layout of site improvements.
- B. Section 01500 - Temporary Facilities and Controls.
- C. Section 02200 - Earthwork.
- D. Section 02825 - Chain Link Fencing

#### 1.04 SUBMITTALS

- A. Copies of required permits.
- B. Provide certificate verifying marking of utilities thru Dig-safe.
- C. Submit shop drawing or description of temporary signs including text, for approval by the Landscape Architect, prior to their installation.

#### 1.05 REFERENCES

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein.
  1. MHD: "Standard Specifications for Highways and Bridges", Department of Public Works, Commonwealth of Massachusetts, latest edition.
  2. Federal, State and/or Municipal Codes.
  3. Public Safety Codes.
  4. U.S. Public Health Service.
  5. National Electric Manufacturers Association.
  6. American National Standards Institute.
  7. American Society of Mechanical Engineers.
  8. Commercial Standards.
  9. Federal Specifications.
  10. Occupational Safety and Health Regulations.
  11. Americans with Disabilities Act Guidelines (ADAAG) for Building and Facilities, 36 CFR Part 1191.
  12. MAAB CMR 521 Regulations.
  13. National Arborist Association Standards, National Arborist Association, 124 Route 101, Bedford, NH 03102.
  14. OSHA Construction Regulations Title 29 CFR Part 1926.

#### 1.06 EXAMINATION OF SITE AND DOCUMENTS



- A. The Contractor shall inform him/herself of existing conditions of the site before submitting his/her bid. No claim for extra compensation or extension of contract time will be allowed on account of conditions which are apparent from a thorough visual examination of the site.

#### 1.07 MAINTENANCE OF ACCESS ON SIDEWALKS AND ROADS

- A. The Contractor shall not close or obstruct any portion of street or sidewalk without obtaining permits therefor from the proper municipal authorities. Streets and sidewalks shall be maintained passable by the Contractor at his own expense, and the Contractor shall assume full responsibility for the adequacy and safety of provisions made. He shall conduct construction operations such that interference with the flow of vehicular and pedestrian traffic is held to a minimum.
- B. The Contractor shall coordinate with the City Fire and Police at all times. The Contractor shall notify the Waltham Fire Department and Waltham Police Department when any street or any portion of the traveled way is to be closed regardless of the length of time or day. No street shall be closed without the approval of the Consolidated Public Works Department of the City of Waltham.
- C. Keep all adjacent streets and sidewalks swept clean at all times. Cleanup operations not performed in a timely manner will be performed by the City of Waltham and back-charged to the Contractor.

#### 1.08 PERMITS AND CODES

- A. 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.
- B. The Contractor, under this Section, shall be responsible for providing and filing all Plans, Specifications and other documents, pay all requisite fees and secure all permits, inspections and approvals necessary for legal installation and operation of the systems and or equipment finished under this Section.

#### 1.09 TRAFFIC POLICE

- A. Traffic police will be required for operations within City streets. Refer to Section 01040 - Control of the Work, Section 1.05 for police requirements and cost.

#### 1.10 CONDITIONS OF WORK

- A. The Work of this Project is subject to the restrictions of the City of Waltham Noise Ordinance. Refer to Section 01010 - Summary of Work, Section 1.06.
- B. Conduct the work giving consideration to protection of the public, protection of the existing work from weather; control of noise, shocks, and vibration; control of dirt and dust; orderly access and storage of materials; protection of existing buildings; protection of adjacent buildings and property. Coordinate work and cooperate with the Owner and Landscape Architect at all times.
- C. Schedule site preparation and removal work in connection with the progress schedule required by the General Conditions.
- D. The Site Preparation / Demolition Plan endeavors to describe the scope and intent of Work. No guarantee is expressed or implied that the Site Preparation and Demolition Plan describes the full extent of objects to be removed in order to facilitate construction. Site Preparation operations not specifically identified on the Contract Drawings shall be considered as part of the basic lump sum contract and do not qualify as extra work.
- E. All other work requiring removal, such as fence, tree roots and former buried footings shall be removed and discarded as required for proper construction of new work without additional cost to the Owner.
- F. No extra demolition shall be performed without first notifying and obtaining written approval of the Landscape Architect.

#### 1.12 DRAINAGE AND EROSION CONTROL

- A. Upon entry to the site, the Contractor shall assume responsibility for site and subsurface drainage. During the Contract period the Contractor shall maintain drainage in a manner satisfactory to the Landscape Architect. At all times, the adjacent areas shall be protected and maintained in their existing conditions.
- B. It shall be the responsibility of the Contractor to render the site erosion-free, at all times during the Contract period. The Contractor shall take special precautions to prevent erosion run-off from slopes, drainage trenches, granular bases, structures, and other improvements. Hay bales, jute mesh, catch basin insert filtration bags, and siltation fabrics shall be used, as determined by the Landscape Architect.
- C. Provide at a minimum, erosion control devices indicated on the Site Prep and Demolition Plan.
  - 1. Straw wattles shall be cylinders of compressed 100% agricultural straw, wrapped in tubular, UV-stabilized synthetic netting Straw Wattle as manufactured by Amerian Green, or approved equal, sized 12" diameter by 25' length, staked in place as indicated on the Drawings.

### 1.13 DELIVERY, STORAGE AND HANDLING

- A. Materials shall be stored in a dry location, off the ground and in such manner as to prevent damage, intrusion of foreign matter and weather. All materials which have become damaged or otherwise unfit for use during delivery or storage shall be replaced at the expense of the Contractor.
- B. Handle and store salvaged chain link fence components in a way to prevent damage and deterioration.

## PART 2 - PRODUCTS

### 2.01 LAYOUT AND STAKING

- A. Refer to Section 01050 - Field Engineering for layout and staking requirements.

### 2.02 DUST CONTROL

- A. Water for dust control shall be free from contaminants hazardous to human health and plant growth. No calcium chloride may be used.

## PART 3 - EXECUTION

### 3.01 LOCATING UTILITIES & SITE ITEMS AFFECTING THE WORK

- A. Prior to site preparation and removals operation, the Contractor shall locate and mark all site items such as utilities which could be affected by site preparation and removals.
- B. Contact Dig-Safe (1-888-344-7233) seventy-two hours prior to the start of any removals or excavation work, and obtain a Certificate verifying that marking the location of utilities has been completed. Contact the City of Waltham Engineering Department to verify the location of additional on-site utilities. Coordinate demolition work with utility companies. Dig-safe does not locate telephone and cable lines; contact the specific utilities involved for this information.

### 3.02 PROJECT CONDITIONS

- A. All apparatus, storage and the operation of work people in connection with activities under this Section shall be confined to the area within the Contract Limit of Work Line as shown on the Contract Drawings and shall not encumber areas outside the site.
- B. Thoroughly wet down all work during demolition to prevent the spread of dust.

Avoid flooding or contaminated run-off.

- C. All existing items to remain which are damaged by the Contractor, will be repaired or replaced at the Contractor's expense. Replacement or repaired items shall be equal to new items as specified.
- D. The Contractor shall be responsible for the methods used in this work including properly protecting against damage to existing and proposed site improvements, structures, site features, utility lines, trees, lawns, etc. Check with municipality and local utility companies for locations of existing utilities which may be in use or abandoned. Investigate and ascertain that underground utilities are correctly located and that they have been shut off and/or abandoned before disturbing them.

### 3.03 PROTECTION

- A. The Contractor shall assume complete responsibility and liability for the safety and structural integrity of all work and utilities to remain during the performance of all work.
- B. The Contractor shall provide safeguards including, but not limited to, warning signs, barricades, temporary construction fences, warning lights and other items required for protection of personnel and the general public during the performance of all work.
- C. The Contractor shall provide barricades for substantial construction in accordance with safety regulations of authorities having jurisdiction and insurance requirements.
- D. All features related to protection shall be maintained until that unit of work has been completed to the point that the danger no longer exists.

### 3.04 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction, and as indicated on the Drawings. Removal includes digging out stumps and obstructions and grubbing roots.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

### 3.05 DEMOLITION OF EXISTING WADING POOL

- A. Concrete walls and bottom of wading pool shall be removed and disposed of in their entirety including all re-bar and fragments of concrete. .
- B. Remove existing water line and cap as shown on the Drawings.

C. Remove existing drain line as shown on the Drawings.

D. See Section 02200 Earthwork for backfilling of pool.

### 3.06 REMOVAL AND STOCKPILING OF PORTIONS OF EXISTING CHAIN LINK FENCE

A. The Contractor shall schedule the removal of those portions of the chain link fence indicated on the Drawings for resetting, at the time he/she judges to be most advantageous to the work of the project. The existing chain link fence may remain in place temporarily as a construction fence.

B. Portions of chain link fencing and gates indicated on the Drawings for resetting, shall be carefully removed and the following elements stockpiled for reuse:

1. Chain link fence fabric, top and bottom rails, stretcher bars, tension bars, rail clamps, and line post caps, and one set of gates.
2. It shall be the Contractor's option to salvage existing fence posts or supply new. If existing fence posts are to be re-used carefully remove concrete footings in a manner to prevent damage to posts. Re-used post shall be unbent, full length, and without significant damage from construction operations.

### 3.07 PAVING

A. The line between existing pavement to be removed and existing pavement to remain shall be cut neatly saw-cut through full depth of pavement section so as to leave a smooth, straight and vertical edge. Cut to the dimensions given or directed. Remove the portion behind the cut with proper tools.

1. Existing pavement which is damaged, disturbed or settled by construction operations shall be cut back by the same method and replaced as directed by the Landscape architect at no additional cost to the Owner.

### 3.08 PLANTING AREAS

A. Remove and dispose of existing grass sod. It shall be the Contractor's option to stockpile existing topsoil for re-use, or to provide new for respreading after re-grading of planting beds is accomplished.

### 3.09 FOOTINGS & MISCELLANEOUS SITE ITEMS

A. Footings & miscellaneous site items shall be removed in their entirety and legally disposed of. Holes resulting from demolition shall be backfilled and compacted

in accordance with Section 02200 Earthwork.

### 3.10 CLEANUP

- A. Keep work areas free from accumulation of debris during the work under this Section and leave the premises in a clean condition after completion of the Work of this Section.
- B. At the completion of the work of this Section, properly and legally dispose of all items removed and not scheduled to remain, including surplus soil material, unsuitable topsoil, demolished materials, and waste materials including trash and debris, and any other waste materials in connection with the work under this Section and leave the premises in a clean condition.

END OF SECTION

## SECTION 02200

### EARTHWORK

#### PART 1 - GENERAL

##### 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Contact Dig-Safe (1-888-344-7233) seventy-two hours prior to the start of any removals or excavation work, and obtain a Certificate verifying that marking the location of utilities has been completed. Contact the City of Waltham Engineer to verify the location of additional on-site utilities. Coordinate earthwork with utility companies.

##### 1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, as indicated on the Contract Drawings and as specified herein.
- B. The work shall include, but is not limited to, the following:
  - 1. Location of all utilities prior to earthwork operations.
  - 2. Excavating, filling, backfilling, and grading.
  - 3. Continued protection for all existing structures
  - 4. Continued provision of safety controls.
  - 5. Performing dewatering necessary to maintain excavated areas free from water from any source.
  - 6. Removal and legal off-site disposal of unsuitable or surplus excavated materials.

##### 1.03 RELATED WORK

- A. Section 02100 - Site Preparation & Demolition: For Erosion Control requirements refer to Section 1.12 Drainage and Erosion Control
- B. Section 02510 - Bituminous Concrete Paving
- C. Section 02667 - Water Service Systems
- D. Section 02725 - Drainage: Pipe Installation
- E. Section 02728 - Drainage Structures
- F. Section 02800 - Site Furnishings

- G. Section 02820 - Chain Link Fencing
- H. Section 02950 - Planting
- I. Section 10430 - Exterior Signs

#### 1.04 REFERENCES

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein.
  - 1. MHD: "Standard Specifications for Highways and Bridges", Department of Public Works, Commonwealth of Massachusetts, Latest Edition.
  - 2. ASTM: American Society of Testing Materials.
  - 3. AASHTO: American Association of State Highway and Transportation Officials.
  - 4. ANSINFPA: American National Standards Institute, National Fire Protection Act.
  - 5. Federal, State and/or Municipal Codes.
  - 6. Public Safety Codes.
  - 7. U.S. Public Health Service.
  - 8. National Electric Manufacturers Association.
  - 9. American National Standards Institute.
  - 10. American Society of Mechanical Engineers.
  - 11. Commercial Standards.
  - 12. Federal Specifications.
  - 13. Occupational Safety and Health Regulations.
  - 14. OSHA Construction Regulations Title 29 CFR Part 1926.

#### 1.05 EXAMINATION OF SITE AND DOCUMENTS

- A. By submitting a bid the Contractor affirms that he/she has carefully examined the site and conditions affecting Work under this Section. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions which can be reasonably inferred from visual inspection of the site.

#### 1.06 SUBMITTALS

- A. Submit to the Landscape Architect:
  - 1. A representative sample of approximately 5 pounds for each type of fill material.
  - 2. Supplier's or laboratory sieve analysis for each type of fill material demonstrating compliance with the Specifications.
  - 3. Results of the Modified Proctor laboratory test for "Suitable Backfill" and "Aggregate Basecourse".
  - 4. Results of field compaction tests.



## 1.07 TESTING

- A. The Contractor shall pay for an independent laboratory, subject to the approval of the Landscape Architect, to provide testing of compaction as follows:
  - 1. Maximum density and optimum water content determination by the ASTM D-1557-09 or AASHTO T-180 Modified Proctor laboratory test for “Suitable Backfill” and “Aggregate Basecourse”.
  - 2. On-site: Provide one field density test of the subgrade, and one field density test in each compacted fill layer, in 4 separate locations. Locations shall be chosen by the Landscape Architect.

## 1.08 PERMITS AND CODES

- A. 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.
  - 1. OSHA Construction Regulations Title 29 CFR Part 1926.
- B. The Contractor, under this Section, shall be responsible for providing and filing all Plans, Specifications and other documents, pay 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 Section.
- C. The Contractor shall include in his/her bid any charges by the Water Department, Utility Company, or other authorities for work done by them and charged to the Contractor. Refer to Section 16100 Electric Service Improvements, Section 1.02 B for Nstar Fee.

## 1.09 CONDITIONS OF WORK

- A. Conduct the work giving consideration to protection of the public, protection of the existing work from weather; control of noise, shocks, and vibration; control of dirt and dust; orderly access and storage of materials; protection of existing buildings; protection of adjacent buildings and property. Coordinate work and cooperate with the Owner and Landscape Architect at all times.
- B. Schedule earthwork in connection with the progress schedule required by the General Conditions.

## 1.10 DISPOSITION OF EXISTING UTILITIES AND SCHEDULING UTILITY WORK

- A. Site information: No representations are made indicating subsurface conditions. It is expressly understood that the Owner/Landscape Architect will not be responsible for interpretations or conclusions drawn therefrom by the Contractor.
- B. Existing Utilities
  - 1. Before starting earthwork, locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
  - 2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, notify the Landscape Architect and Owner, and consult utility Owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility Owner.
  - 3. Do not interrupt existing utilities serving facilities occupied or used by Owner and others, during occupied hours, except when permitted in writing by Owner and then only after acceptable temporary utility services have been provided. Provide minimum of 48 hour notice to Owner, and receive written notice to proceed before interrupting any utility.
  - 4. Inactive utilities encountered or utilities abandoned during construction operations shall be removed, plugged or capped. The location of such utilities shall be noted on Record Drawings and reported in writing to the Landscape Architect.

## 1.11 DEFINITIONS

- A. Fill and backfill shall be, for the purpose of this Specification, considered interchangeable terms and shall mean material to be used to bring existing or construction grades up to finish subgrade levels.
- B. The words “finish grade” as used herein mean the required final grade elevations indicated on the Contract Drawings. Where not otherwise directed, areas outside buildings shall be given uniform slopes between points for which finish grades are shown, or between such point and existing grade, except that vertical curves or roundings shall be provided at abrupt changes in slope.
- C. The word “subgrade” as used herein, means the required surface of subsoil, borrow fill or compacted fill.
- D. “Trench” shall be defined as an excavation of any length where the width is less

than twice the depth. All other excavations shall be classified as open.

- E. “Unsuitable Materials” shall include the following:
  - 1. Pavements, utility structures, building foundations and other manmade structures.
  - 2. Peat, muck, organic silt and other organic materials subject to decomposition, consolidation or decay.
  - 3. Miscellaneous fill including cinders, ash, glass, wood, masonry and metal.
  - 4. Ledge and boulders except as specified herein for fills.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Suitable Backfill
  - 1. Suitable backfill shall be used whenever indicated on the Drawings, and for general grading.
  - 2. “Suitable Backfill” shall be natural soil, well-graded and free from all organic weak, compressible, and frozen materials, and shall contain no stone larger than two (2) inches in maximum dimension. It shall be of such nature and character that it can be dried and compacted and shall be free of all expansive materials (such as high plastic clays) and of materials subject to decay, decomposition, or dissolution, and shall conform to the following gradations:

<u>U.S. Sieve No.</u>	<u>% Passing by Weight</u>
2 inch	100%
#4	20-75%
#40	0-25%
#200	0-5%

- 3. Material from excavation on the site meeting the above requirements as evidenced by testing may be used as “Suitable backfill” provided it has not been contaminated with unsuitable material.
- B. Aggregate Base Course, Aggregate Backfill & Gravel:
  - 1. Where Aggregate Base Course, Aggregate Backfill or Gravel is indicated on the Drawings, this material shall conform to the requirements of

M1.03.0 Gravel Borrow, Type C of the MHD Standard Specifications except that the largest stone dimension shall be one (1) inch. Gravel shall consist of inert material which is hard durable stone and coarse sand; free from loam, clay, organic material, surface coatings, trash, frozen materials and deleterious materials. Gradation requirements are as follows:

<u>Sieve Designation</u>	<u>Percent Passing</u>
1 inch	100
½ inch	50-85
No. 4	30-60
No. 50	8-28
No. 200	0-10

C. Crushed Stone shall conform to the requirements of M2.01.0 Crushed Stone of the MHD Standard Specifications, sized as indicated on the Drawings, with gradation for size as required by the Standard Specifications.

D. Bedding material for pipes and waterlines shall conform to the following:

1. Bedding shall be gravel, crushed quarry rock or crushed gravel, from off-site sources graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
1 inch	100%
¾ inch	90-100%
⅜ inch	20-55%
No. 4	0-10%
No. 8	0-5%

E. Sand

1. Shall conform to the requirements of Section M1 .04.1 of MHD Standard Specifications.
2. Sand for use in subdrain installations shall conform to the requirements of Section M1.04.0 with the following grading limitations, as determined by AASHTO-T11 and T27.

<u>Sieve Designation</u>	<u>Percent by Weight Passing Minimum</u>	<u>Percent by Weight Passing Maximum</u>
½ in.	100	
3/8 in.	85	100
No. 4	60	100
No. 16	35	80
No. 50	10	55
No. 100	2	10

PART 3 - EXECUTION

3.01 LAYOUT

- A. Layout site improvements as required in Section 01050 - Field Engineering.
- B. The Contractor shall inform the Landscape Architect when the general layout is completed and shall not begin excavation until the various alignments are approved by the Landscape Architect. Any discrepancies encountered in field conditions shall be reported to the Landscape Architect immediately.
- C. The Contractor shall be responsible for maintaining the correct vertical and horizontal alignment of all elements, which responsibility shall not be waived by the Landscape Architect’s approval of basic layout and stakeout.

3.02 PROTECTION

- A. The Contractor shall assume complete responsibility and liability for the safety and structural integrity of all work and utilities to remain during the performance of all work.
- B. The Contractor shall provide safeguards including, but not limited to, warning signs, barricades, temporary construction fences, warning lights and other items required for protection of personnel and the general public during the performance of all work.
- C. The Contractor shall provide barricades for substantial construction in accordance with safety regulations of authorities having jurisdiction and or insurance requirements.
- D. All features related to protection shall be maintained until that unit of work has been completed to the point that the danger no longer exists as approved by the

Landscape Architect.

### 3.03 EXCAVATION

- A. Refer to Section 02725 - Drainage Pipe for additional requirements for excavating drainage pipe trenches.
- B. Excavation is “Unclassified”, and shall include excavation to subgrade elevations indicated on the Drawings, or required to accommodate new construction, regardless of the character of materials and obstructions encountered and shall be understood to include rock and boulders, shale, boulders, earth, hardpan, fill, foundations, pavements, curbs, piping and debris, except as follows:
  - 1. Notify the Landscape Architect prior to proceeding if materials greater than 1 cubic yard in size are encountered.
  - 2. Excavation of unanticipated materials encountered which are greater than 1 cubic yard in size and which could not be reasonably inferred from surface inspection will be paid for as an adjustment to the Contract Price due to unanticipated subsurface conditions, or adjustment may be made to the layout to avoid excavation of same.
- C. Unauthorized Excavation: When suitable bearing material is encountered at subgrade elevations shown and excavation is made to greater depth, bring grade back to elevation required by providing appropriate fill material at no additional cost.
- D. When excavation has reached required subgrade elevations, notify the Landscape Architect.
- E. If the “assumed” bearing materials are not encountered at the subgrade elevations indicated, additional excavation work may be authorized by the Owner. Do not perform additional excavation unless directed by the Landscape Architect in writing. Removal of unsuitable material and its replacement with proper backfill, if directed in writing by the Landscape Architect, will be paid for as an adjustment of the Contract price due to unanticipated subsurface conditions.
- F. During excavation, do not damage roots of trees which are to remain. When excavating or trenching within the branch spread of trees scheduled to remain, hand dig in a manner which will cause minimum damage to root systems. Do not cut tree roots over 2 inches in diameter. Do not leave surface roots exposed. Prune injured roots clean and backfill as soon as possible to the satisfaction of the Landscape Architect and Owner.
- G. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space

restrictions, stability of material excavated, or depth of excavation.

- H. Dewatering: Prevent water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area. Under no circumstances lay pipe or install appurtenances in water. Keep all trenches free from water until they have been backfilled.
- I. Materials Storage: Stockpile satisfactory excavated materials where directed until required for backfill or fill. The Landscape Architect shall approve the location of all stockpiles prior to placement. Place, grade and shape stockpiles for proper drainage.
  - 1. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees to remain.
  - 2. Legally dispose of excess soil material and waste materials off-site.
- J. Frost Protection
  - 1. Make no excavations to fill depth indicated when freezing temperature may be expected unless intended improvements can be accomplished immediately after the excavations have been completed. Protect bottom so excavated from frost if progress is delayed. Should protection fail, remove frozen materials and replace with gravel as directed at no cost to the Owner.
  - 2. Keep the site clear and free of accumulations of snow within the limit of the Contract lines as necessary to carry out the work of the Contract.
  - 3. Fill materials containing frost shall not be utilized, nor shall filling be done over frozen materials.

### 3.04 BACKFILL AND FILL

- A. Refer to Section 02725 - Drainage Pipe for additional requirements for backfilling and filling drainage pipe trenches.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
  - 1. Acceptance of construction below finish grade by Landscape Architect.
  - 2. Inspection, testing, approval and recording locations of underground utilities to the satisfaction of the Landscape Architect.
  - 3. Compaction testing of subgrade if required at that location.

### 3.05 PLACEMENT OF FILL

- A. Placement: Place backfill and fill materials in uniform lifts of not more than 12 inches in loose depth for ordinary fill and 8 inches in loose depth for other materials compacted by heavy compaction equipment and not more than 6 inches in loose depth for material compacted by hand operated tampers.
1. Coordinate backfilling with the installation of the work of all trades.
  2. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
  3. Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately the same elevation in each lift.
  4. Backfill by hand around pipe and for a depth of one (1) foot above the pipe. Use earth without rock fragments or large stones and tamp firmly in layers not exceeding 6 inches in thickness, taking care not to disturb the pipe. Compact the remainder of the backfill thoroughly with a rammer of suitable weight or with an approved mechanical tamper, or if the soil is granular, by flooding, provided that under pavements, walks and other surfacing, the backfill shall be tamped solidly in layers not exceeding 6 inches in thickness.
  5. Compact backfill to match adjacent areas as specified above. Correct settlement of fill by filling to subgrade levels in all areas where settlement occurs.

### 3.06 COMPACTION

- A. Compact soil to not less than the following percentages of maximum density of soils in accordance with ASTM D1557, Method C or AASHTO T-180).
1. Subgrade and base courses under all areas (with the exception of planting beds), utility trench backfill, fill at base and around footings, and curb subgrade: Compact each layer of backfill or fill material to 95 percent of maximum dry density.
  2. Planting beds: Compact to 85 percent of maximum dry density.



- B. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material, to prevent free water from appearing on surface during or subsequent to compaction operations. Remove and replace soil material that is too wet to permit compaction to specified density.
- C. Provide compaction testing as required in Section 1.07 Testing this Section.

### 3.07 SUBGRADE PREPARATION AND GRAVEL PLACEMENT FOR PAVEMENTS

- A. Clean the rough subgrade of all loose, soft, foreign or other unsuitable material and reshape as required. Add suitable fill material to meet required grade.
- B. Compact to required grades and sections for paving. Tamp traces of trenches. Remove spongy or otherwise unsuitable material and replace with approved material. Loosen exceptionally hard spots and re-compact. Take every precaution to obtain a foundation of uniform bearing power. In absence of specific requirement, compact foundation by such means as will provide firm base and insurance against settlement of superimposed work.
- C. Roll longitudinally at sides, overlapping each pass by one-half of rear wheel. Fill all depressions or settlements which occur. Continue until all stones are firmly interlocked and surface is true and unyielding. After final rolling, surface is to be free of depressions or irregularities greater than 3/8 inch in ten (10) feet.
- D. Construct base course as detailed on the Contract Drawings for all areas of new paved surfaces in this Section. Placement of gravel base course shall conform to the requirements of MHD except as herein modified.
- E. Spread gravel from self-spreading vehicles, approved type of power grader or by hand upon prepared sub-grade. Spread evenly in layers so as to avoid separation of aggregates. Layers shall not exceed six (6) inches in depth after compaction. Remove stones larger than four (4) inches. When spread and rolled on the prepared surface, it shall form a stable surface. Compaction shall have a density of not less than 95% of maximum density determined in accordance with ASSHTO-T-180 Method D. All rolling shall be done with a roller weighing 8 to 10 tons. Compact any portion which is not accessible to a roller by mechanical or hand tamper.
- F. Final rolled surface shall be true to the lines and grades indicated on the Contract Drawings or as directed by the Landscape Architect. Fill any depression that may appear during and after rolling with gravel and re-roll until the surface is true and even. Tolerance shall be 3/8 inch maximum above or below the cross-section grades and 3/8 inch maximum under a 10 foot line longitudinally.
- G. Maintain the surface of any layer in its finished condition until succeeding layer is

placed. Properly drain the subbase at all times.

### 3.08 GRADING

- A. The Contact Drawings indicate, in general, alignment and finish grade elevations. The Landscape Architect, however, may make such adjustments in grades and alignments as are found necessary in order to avoid interference with any special conditions encountered.
- B. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- C. Grade areas to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:
  - 1. Paved areas: Shape surface of areas under paved surfaces to line, grade and cross section to provide finished grades of pavements within tolerances specified.
- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.
- E. Complete grading operations after utilities have been installed, site improvements included under this Contract have been completed and all rubbish, materials and debris have been properly disposed of.
- F. Do all cutting, filling, reshaping, regrading and re-compacting as necessary to meet the requirements of the Contract Drawings and this Section of the specifications. Maintain sub-grades at the levels specified until turned over to subsequent construction. Bring to required sub-grade levels any areas where settlement, erosion or other grade changes occur.

### 3.09 PROTECTION AND REPAIR

- A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape and compact to required density prior to further construction.
- C. Whenever streets, lawns, sidewalks or improvements outside the Contract Limit of Work Line have been excavated in fulfilling the work required under this

Contract, the Contractor shall furnish and install all material necessary to bring finish surfaces level with the existing conditions in accordance with the governing authority. Notify the proper authorities prior to restoring surfaces outside the Contract Limit of Work.

- D. Do all repairs and restoration to pavements, curbs, and other work inside and outside of the project site damaged by the work under this Contract and restore all existing work to a condition at least equal to the condition specified for this Contract for such improvements.

### 3.10 CLEANUP

- A. Keep all work areas free from accumulation of debris during the course of work under this Section.
- B. At the completion of the Work of this Section, properly and legally dispose of all excavated materials, all rubbish, debris, waste materials from, and about the site, building, and structures, including tools, scaffolds, apparatus and appliances used in connection with work under this Section and leave the premises in a clean condition.

END OF SECTION

## SECTION 02500

## GRANITE CURB

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. This Section specifies furnishing all labor, materials and equipment for the following items of work and all work incidental thereto as indicated on the Drawings and as specified.
  - 1. Removal and resetting of existing roadway granite curbing to allow for utility connections in the street. .
  - 2. If necessary due to breakage, shortage, or unsuitability of existing curbing for reuse, the Contractor shall supply and install additional granite curbing to restore street curbing to existing condition.

## 1.02 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that relate directly to work of this Section include, but are not limited to:
  - 1. Section 02200 - Earthwork.
  - 2. Section 02510 - Bituminous Concrete Pavement.
  - 3. Section 03300 - Cast-in-place Concrete

## 1.03 QUALITY ASSURANCE

- A. Requirements given herein may be affected by other related requirements of the project specification. Correlation of Contract requirements is the responsibility of the Contractor.
- B. All protection work and general operations shall be governed by the requirements of OSHA, as most recently amended.
- C. The Contractor shall take proper precautions not to damage any existing site conditions specifically excluded or excepted from the Contract and will be held solely responsible for any damage occurring during the course of the work under construction. The Contractor shall, at his own expense, make any and all repairs

as required to restore to the original condition any area or item so damaged.

- D. During the construction period, the Contractor shall take special measures including, but not limited to, wetting down dust generating surfaces to control dust on site, in order to prevent annoyance and / or damage to adjacent property whether public or private.
- E. The Contractor shall take all necessary measures to keep streets, over which equipment and service for project travel, clean and free from dirt, dust, mud and debris resulting from construction operations. The actions taken shall meet the requirements of all parties having jurisdiction.
- F. All work herein shall be governed by the requirements set forth in the applicable reference standard.

#### 1.04 ABBREVIATIONS

- A. MHD Standard Specifications: The Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, 1988 Edition

#### 1.05 SUBMITTALS

- A. Certification of Specification Compliance for granite curb.
- B. Shop drawings for granite curbs and transition pieces.

### PART 2 - MATERIALS

#### 2.01 GRANITE CURBING

- A. Gravel base shall be Gravel Borrow, M1.03.0 Type C of the MHD Standard Specifications, 2" aggregate maximum.
- B. Concrete for cradle shall be 3500 psi at 28 days, conforming to the requirements of Section 03300 Cast-in-Place Concrete.
- C. New granite curbing shall be Swenson light gray or approved equal and be a hard durable stone free from cracks, seams, chinks, spalling or any surface flaws. Curbing shall be straight, and radius conforming to the specifications of the MHD Standard Specifications for Highways and Bridges under Section M9.04.0.
  - 1. Vertical granite curb shall be Type VA-4 as specified in Section M9.04.1 MDPWSS for Highways & Bridges. Front and back faces, tops and ends shall be dressed for setting. The front and back face shall be at right angles to the plane of the top. Minimum standard lengths for straight curbstone shall be six feet. Top surface shall be free from winds, shall be sawn to a

true plane. The front and back faces and ends shall be smooth quarry split, free from drill holes. Curbstone shall weigh approximately 130 lbs. per linear foot.

- D. Salvaged Granite Curb to be reused shall be in usable condition suitable to be re-set in the new locations and at new depths, free from cracks or splits which impair structural integrity.
  - 1. All salvaged lengths of curbing to have clean, plumb ends (cut if necessary) and minimum length of 4'-0".
  - 2. Curbing proposed for reuse shall be removed from its current location and arranged on site for review by the Landscape Architect and Owner, who shall have the final discretion on which sections are acceptable for reuse.
- E. Cut curbing accurately to shape and dimensions indicated on accepted final shop drawings.
  - 1. Curved sections of type VA-4 vertical curbing:
    - a. On curves with a radius of less than 100 feet, curbing shall be cut to required curvature as expressed in radii on the Contract Drawings.

## 2.02 MORTAR MATERIALS FOR CURB INSTALLATION

- A. Portland Cement - AASHTO-M85.
- B. Sand - Use a clean, washed, uniformly well-graded masonry sand meeting the requirements of ASTM C144.
- C. Water - Use water from public mains, clean, potable, and free from excessive amounts of salts, acids, or other deleterious materials.
- D. Mortar - 1 part Portland cement, 2 parts sand, and sufficient water to form a workable mixture.

## PART 3 - EXECUTION

### 3.01 GRANITE CURBING

- A. Curbing shall be set to the lines and grades shown on the Contract Drawings and as detailed.
- B. Set curbing with front face with maximum 1/16" vertical offset between curbing and paving. Provide concrete cradle as shown on the Drawings. Curb alignment shall be smooth and continuous. Joints between curb lengths shall be fitted together as

closely as possible to a 3/8" wide joint. Joints shall be carefully filled with cement mortar and neatly pointed on the top and exposed faces. After pointing, clean off all excess mortar and tool joints slightly below adjacent stone surfaces. Curb shall be thoroughly cleaned to remove stains and mortar.

- C. Prepare subgrade and base as specified in Section 02300, Earthwork. Spread gravel borrow base upon firm subgrade. After being thoroughly compacted by tamping, base shall be not less than 6" in depth.
- D. Setting:
  - 1. Construct concrete cradle as shown on the Drawings. .
  - 2. All spaces under the curbstones shall be completely supported throughout their length.
- E. Mortar:
  - 1. Measure and batch materials either by volume or weight. Use accurate measuring devices to ensure uniformity and coloration of mix. Shovel count measurement of sand is not acceptable.
  - 2. Mix cementitious materials and aggregate in a clean mechanical mixer for at least 5 minutes. Add water in amount to provide satisfactory workable consistency of mortar.
  - 3. Retemper mortar as required within 2 hours of mixing to replace water lost by evaporation. Use and place mortar in final position within 2-1/2 hours of the initial mixing. Discard mortar after 2-1/2 hours of the initial mixing.
- F. Pointing:
  - 1. Joints between curbstones shall be carefully filled full depth both sides with light gray cement mortar and neatly pointed on the top and exposed faces.
  - 2. After pointing, clean off all excess mortar and tool joints slightly below adjacent stone surfaces.

END OF SECTION

## SECTION 02510

## BITUMINOUS CONCRETE PAVING

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. 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.
- B. Examine and coordinate all Contract Drawings and other section of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to the paving.

## 1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, as indicated on the Contract Drawings and/or as specified herein.
- B. The work shall include, but is not limited to, the following:
  - 1. Installation of new bituminous concrete pavement within the water spray park, including center fill paving within manhole covers.
  - 2. Replacement in kind of existing roadway cross-section where removed for new utility connections.

## 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition
- B. Section 02200 - Earthwork: Aggregate Base Course
- C. Section 02590 - Colorcoating and Line Painting
- D. Section 02800 - Site Furnishings
- E. Section 02820 - Water Play Equipment
- F. Section 02667 - Water Service Systems
- G. Section 02725 - Drainage and Sewer Pipe
- H. Section 02728 - Drainage and Sewage Structures: Manhole covers to be infilled with bituminous concrete.



#### 1.04 REFERENCE STANDARDS

- A. Work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein.
1. MHDSS: Standard Specifications: Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and Bridges, latest edition.
  2. ASTM: American Society for Testing and Materials.
  3. AASHTO: American Association of State Highway and Transportation Officials.
  4. Federal, State and/or Municipal Codes
  5. Public Safety Codes
  6. U.S. Public Health Service
  7. National Electric Manufacturers Association
  8. American National Standards Institute
  9. American Society of Mechanical Engineers
  10. Commercial Standards
  11. Federal Specifications
  12. Occupational Safety and Health Regulations
  13. ADA: Americans with Disabilities Act

#### 1.05 QUALIFICATIONS

- A. Installer: Company specializing in performing the work of this section with documented experience on at least two similar projects.

#### 1.06 EXAMINATION OF SITE AND DOCUMENTS

- A. By submitting a bid the Contractor affirms that he/she has carefully examined the site and all conditions affecting Work under this Section. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.
- B. Plans, surveys, measurements and dimensions under which the work is to be performed are believed to be correct, but the Contractor shall have to examine them for him/herself during the bidding period, as no additional compensation will be made for errors or inaccuracies that may be found therein.

#### 1.07 SUBMITTALS

- A. The Contractor shall provide the following submittals for approval in conformance with requirements of SECTION 01300, SUBMITTALS. Do not order materials until Landscape Architect's approval of submittals, certifications or test results have been obtained. Delivered materials shall closely match the approved submittals.

1. Submit the bituminous concrete design mix for each application, indicating aggregate sizes and proportions.
2. Manufacturer's literature for tack coat demonstrating compliance with the specifications.

#### 1.08 PERMITS AND CODES

- A. 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.
- B. The Contractor, under this Section, shall be responsible for providing and filing all Plans, Specifications and other documents, pay all requisite fees and secure all permits, inspections and approvals necessary for legal installation and operation of the systems and or equipment finished under this Section.

#### 1.09 CONDITIONS OF WORK

- A. Conduct the work giving consideration to protection of the public, protection of the existing work from weather; control of noise, shocks, and vibration; control of dirt and dust; orderly access and storage of materials; protection of existing buildings; protection of adjacent buildings and property. Coordinate work and cooperate with the Owner and Landscape Architect at all times.
- B. Schedule paving in connection with the progress schedule required by the General Conditions.

### PART 2 - PRODUCTS

#### 2.01 BITUMINOUS CONCRETE PAVEMENT

- A. Bituminous concrete shall be Class I, Type I-1, furnished and laid in accordance with Section 420 and 490 of the MHD Standard Specifications except as modified herein.
- B. Aggregate Base course for bituminous concrete shall be Compacted Aggregate Base Course as specified in Section 02200 - Earthwork.
  1. Subgrade and aggregate base course shall be installed and compacted as required in Section 02200 - Earthwork.
- C. Aggregate sizes and gradation for bituminous mixes shall be as follows:

1. Bituminous concrete base course shall conform to MHD Standard Specifications, Section M3, Table A Job Mix Formula for “Base Course”.
2. Binder course shall conform to MHD Standard Specifications, Section M3, Table A Job Mix Formula for “Binder Course.”
3. Wearing course for roadways shall be equivalent to MHD Standard Specifications, Section M3, Table A Job Mix Formula for “Top Course” for road and sidewalk applications.
4. Wearing course for bituminous concrete **within the water spray park site** shall be equivalent to MHD Standard Specifications, Section M3, Table A Job Mix Formula for "Surface Treatment" with a maximum aggregate size of 3/8".

## 2.02 TACK COAT

- A. Tack Coat shall be bitumen Grade, AC-10, or AC-20 asphalt cement conforming to Section M3 of the Standard Specifications.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Make any corrections necessary to base material furnished and placed under SECTION 02200, EARTHWORK, to bring base course materials to sections and elevations shown on the Contract Drawings.
- B. The contact surfaces of curbs, walls, manholes, catch basins or other appurtenant structures in pavement shall be painted thoroughly with a thin uniform coating of tack coat just before any bituminous mixture is placed against them.

### 3.02 PATCHES AND NEW PAVING ABUTTING EXISTING

- A. Where the line of demarcation between new and existing paving occurs, the existing paving shall be saw-cut to provide a clean sharp joint. The pavement shall be sawn by an approved machine to a depth which will permit the cutting of the pavement without damage to the pavement left in place.
  1. Protect sawn edges of paving from damage until new paving is placed against it. Existing pavement which is damaged, disturbed or settled, shall be cut back by the same method and replaced as directed by the Landscape Architect without additional cost to the Owner.
- B. Where new bituminous paving meets existing paving the finish grades in the new

work shall be adjusted if necessary, to blend smoothly with the existing pavement. Seal joint at saw-cut line with an approved bituminous emulsion. Notify the Landscape Architect of discrepancies before proceeding with the work.

3.03 REPLACEMENT IN KIND

- A. Roadway pavement removed to allow for utility connections shall be patched and replaced in kind. Replace each course to the depth and type of existing bituminous concrete.

3.04 PLACEMENT

- A. The mixtures shall be placed and compacted only at such times which permit the proper inspection and checking by the Landscape Architect.
- B. The mixtures shall be placed only upon approved surfaces that are clean and dry, and when weather conditions are suitable. No bituminous material shall be applied when the temperature is below 32 F.
- C. The temperature of bituminous concrete mixture when delivered to the site shall conform to the following, with a tolerance of plus or minus 20 F.

<u>Air Temperature</u>	<u>Project Delivery Temperatures</u>
35F	300F
40F	290F
6SF	280F
90 F, or over	270F

- D. Place courses of bituminous concrete in conformance to application and depth requirements shown on the Contract Drawings and specified herein. Depths referenced shall be compacted thicknesses. Bituminous concrete for binder course and wearing or top course shall be furnished and laid in accordance with Section 460 of the Standard Specifications, and as directed herein and by the details.

3.05 SPREADING

- A. The equipment for spreading and finishing shall be mechanical, self-powered pavers, capable of spreading and finishing the mixture true to lines, grade, width and crown by means of fully automated controls for both longitudinal and transverse slope.
- B. Mixtures shall be deposited in a mechanical spreader and immediately spread thereby, and then struck off in a uniform layer to the full width required and of such depth that each course, when compacted, shall have the required thickness and shall conform to the grade and cross section contour specified.

- C. Hand Spreading: Spreading by hand methods will be permitted only for particular locations in the work which because of irregularity, inaccessibility or other unavoidable obstacles do not allow mechanical spreading and finishing.
- D. Compaction:
1. After the paving mixture has been properly spread, compaction shall be obtained by the use of power rollers of approved design and weight per inch of roller. The rollers shall be steel wheeled supplemented with pneumatic-tired rollers where required.
  2. Along curbs, structures and places not accessible with a roller, the mixture shall be thoroughly compacted with mechanical tamping devices. The surface of the mixture after compaction shall be smooth and true to the established line and grade.
  3. The densities of the completed pavement shall be not less than 95% of the density obtained from laboratory compaction of a mixture composed of the same materials in like proportions.
- E. All areas of finished paving on which water stands or which are found excessively uneven shall be promptly brought to the correct grade and line.
- F. When tested with a ten (10) foot straightedge there shall be no deviation from true surface planes represented by the grade elevations shown on the Contract Drawings in excess of one-quarter (1/4) inch.
- G. Do any repair or patching to pavements outside the project site damaged by work of the contract. All patching work required shall be in accordance with requirements for new construction.
- H. No vehicular traffic of any kind shall be allowed to pass over the newly finished surface until it has had time to set. Twenty-four (24) hours will be considered sufficient time for the pavement to set in most cases, but this period may be extended by the Landscape Architect/Engineer as required by weather or other reasons.
- I. Install frames and rims after installation of binder course for bituminous concrete pavement. Install wearing course after the installation of the frames and rims. Frames and rims shall have the same grade and slope as adjacent construction.

### 3.06 QUALITY ASSURANCE

- A. The Landscape Architect may require the Contractor to remove and replace at the Contractor's expense any defective mix not conforming to the specified job mix formula.

- B. If, at any time before the final acceptance of the work, any soft, imperfect places or spots shall develop in the surface, all such places shall be removed and replaced with new materials and then compacted until the edges at which the new work connects with the old become invisible, at no additional expense to the Owner.

### 3.07 CLEAN-UP

- A. Keep all work areas free from accumulation of debris during the course of work under this Section.
- B. At the completion of the paving, all rubbish, debris, waste materials from, and about the site, building, and structures, including tools, scaffolds, apparatus and appliances used in connection with work under this Section shall be legally disposed of and the premises shall be left in a clean condition.

END OF SECTION

## SECTION 02590

## COLOR COATING AND LINE PAINTING

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. 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.
- B. Examine and coordinate all Contract Drawings and other section of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to this Section.

## 1.02 SCOPE OF WORK

- A. Work under this Section shall include labor, materials, services, equipment, transportation and accessories and the performance of operations necessary to complete the work of this Section, as indicated on the Contract Drawings and/or as specified herein.
- B. The work shall include, but is not limited to, the following:
  - 1. Color coating of water spray area.
  - 2. Line Painting of water spray area.

## 1.03 RELATED WORK

- A. The following items are not included in this Section and will be performed under the designated Sections:
- B.
  - 1. Section 02510 - Bituminous Concrete Paving

## 1.04 SUBMITTALS

- A. Submit the following in accordance with the requirements of the General Conditions:
  - 1. Paint: Submit manufacturer's product data demonstrating specification compliance for line paint, and fortified and non-fortified paint for area painting.

(a) Submit color samples of manufacturer's custom colors for final selection by the Owner.

2. Submit manufacturer's directions for application, including permissible temperature for application and storage, drying time, coating thickness and application rates, and period of curing time prior to application to new bituminous concrete.

3. Submit installer name and evidence of qualifications.

#### 1.05 REFERENCES

A. Massachusetts Highway Department Standard Specifications for Highways and Bridges, 1988 edition.

#### 1.06 QUALIFICATIONS

A. Installer shall be from a company with at least 5 years experience in commercial painting.

#### 1.07 REGULATORY REQUIREMENTS

A. Materials and handling of paint shall conform to all environmental and OSHA regulations.

#### 1.08 DELIVERY STORAGE AND HANDLING

A. All packaged materials shall be delivered to the site in original unopened containers clearly indicating manufacturer name, brand name, and other identifying information. Paint shall be stored within the temperature ranges indicated by the manufacturer.

#### 1.09 ENVIRONMENTAL REQUIREMENTS

A. Paint shall be applied within the temperature ranges recommended by the paint manufacturer.

### PART 2 - MATERIALS

#### 2.01 PAINT

A. Paint for marking lines shall be factory-mixed non-bleeding paint specifically formulated for marking asphaltic concrete surfaces for line painting.

1. Paint shall be 100 percent acrylic latex emulsion type, containing no alkyds, butadiene styrene, or vinyls and shall be thinned with water only.



The paint shall be suitable for use over all types of bituminous surfaces, including weathered bituminous. When applied over bituminous concrete it shall not cause lifting, cracking, peeling, or other damage to the pavement. Thicknesses of coats shall be in accordance with manufacturer's recommendations. Acceptable manufacturers California Paints, Neyra Industries, The Glidden Co., or approved equal.

- B. Paint for area color coating shall be a slip-resistant fortified 100% acrylic latex emulsion with silica additive. Acceptable manufacturers California Paints, Nova Sport, Dalton Enterprises, Inc., or equal. Paint shall contain no alkyds, butadiene styrene or vinyls and shall be thinned with water.
1. Fortification shall be by addition of silica sand, pre-mixed at manufacturer's plant. No sand or silica shall be added to the emulsion in the field.
  2. Finish coat shall be as described above except that it shall be a non-fortified acrylic latex emulsion.
  3. Color: Pigment dispersions in the color coating are to be of the best quality chrome oxides so as to obtain a permanent true color. Colors for area color coating shall be chosen by the Landscape Architect/Owner from manufacturer's standard color choices.

## PART 3 - EXECUTION

### 3.01 APPLICATION OF PAVEMENT MARKINGS-GENERAL

- A. Paint shall be applied according to manufacturer's instructions. **Curing period for new bituminous pavement prior to paint application shall be a minimum of twenty one (21) days.**
- B. Pavement surface should be dry and free of sand, grease, oil and other foreign substances prior to the application. The ambient air temperature is to be a minimum of 45 degrees Fahrenheit and rising at the start of paint application. Do not apply paint when rain is imminent.
- C. Thickness of each coat shall be as recommended by the manufacturer. Painted markings are to be protected until they are dry enough to withstand traffic without tracking or being damaged.
- D. Paint shall be applied by brush, spray or roller, free of any fogging or overspray.

### 3.02 AREA PAINTING

- A. Sweep and air clean area to be surfaced.

- B. Apply two coats of fortified surface paint at a rate of approximately .05 gallon per square yard per coat.
- C. Apply a third coat of non-fortified finish paint at a rate of approximately .05 gallon per square yard.
- D. Apply line paint as described below.

### 3.03 LINE PAINTING

- A. Width of lines shall be 2".
- B. Lines shall be accurately located and marked. All surfaces shall be thoroughly cleaned before the lines are painted thereon. The paint shall be applied accurately within the limits shown on the plans. All lines shall be clear and distinct with sharply defined edges. At least two (2) hours shall elapse between the painting of the first and second coats. Protect painted lines until cured.
- C. Edges of lines to be painted shall be masked prior to painting to insure sharp edges. Ragged lines will not be acceptable.
- D. Apply two coats of line paints in specified color.
- E. Remove masking tape and clean up work area.

### 3.04 GUARANTEE AND ACCEPTANCE

- A. Painted lines and surfaces shall be guaranteed for a period of one year from final acceptance against cracking, peeling, checking, or other defect. The Contractor will repair, re-coat or otherwise make satisfactory, any failed lines or areas, at no cost to the Owner.

END OF SECTION

## SECTION 02667

## WATER SERVICE SYSTEMS

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine and coordinate all Contract Drawings and other sections of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to the installation of water service systems.

## 1.02 SCOPE OF WORK

- A. Work under this section includes tapping into the existing water main in Crescent Street and the installation of a new water service line with back-flow preventer, connecting to the equipment vault of water spray elements.
- B. Responsibilities include furnishing and installing of type "K" copper piping, tapping sleeves, corporation stops and boxes, curb stops and boxes, thrust blocks, straps and clamps for pipe restraints, strainers, backflow preventer, testing and disinfection (sterilization) of mains, installation of a water meter furnished by the City, and all other specified work and connections as shown on the plans and details. The work by the Contractor shall be performed in accordance with recognized plumbing, engineering and all other applicable standards. The work shall include all fittings and piping and other appurtenances necessary for complete and proper installation of the work. All lines shown are approximate and must be coordinated with other utilities or site improvements to be installed.
- C. Work herein described and/or shown on the Plans shall be in strict accordance with the best-recognized practices for water service installations. The standards set forth in the selection of materials and supplies are intended to conform to those adopted by the City of Waltham, and the Contractor shall further familiarize himself with the Municipality's requirements when the occasion or choice of materials or supplies so demand.
- D. Per Municipality regulations and requirements, the Contractor performing the work of this section shall be a MA licensed master plumber.

- E. The Municipality, through their authorized agents, reserves the right to make inspections of the work during its manufacture or progress.
- F. Sheeting, shoring and bracing, excavation and backfill shall be accomplished in accordance with Section 02200 - Earthwork, the applicable provisions of the Standard Specifications, and OSHA Construction Regulations Title 29 CFR Part 1926. The cost of the sheeting, shoring and bracing, unclassified excavation and backfill shall be included under the Lump Sum Bid.

### 1.03 TRAFFIC POLICE

- A. Traffic police will be required for operations within City streets. Refer to Section 01040 - Control of the Work, Section 1.05 for police requirements and cost.

### 1.04 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition.
- B. Section 02200 - Earthwork: Refer to Earthwork for excavation, backfill, and fill materials.
- C. Section 02820 - Water Play Equipment
- D. Section 03300 - Cast-in-Place Concrete.

### 1.05 REFERENCES

- A. The following standards and definitions are applicable to the work of this Section to the extent referenced herein:
  - 1. MHD Standard Specifications: Commonwealth of Massachusetts Standard Specifications for Highways and Bridges, latest edition.
  - 2. OSHA Construction Regulations Title 29 CFR Part 1926.
  - 3. ASME B16.1 Cast Copper Alloy Solder Joint Pressure Fittings.
  - 4. ASTM B88 Seamless Copper Water Tube.
  - 5. ASTM D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
  - 6. AWWA C500 Gate Valves, 3 through 48 in NPS, for Water and Sewage Systems.
  - 7. AWWA C504 Rubber Seated Butterfly Valves.
  - 8. AWWA C507 Ball Valves
  - 9. AWWA C508 Swing-Check Valves for Waterworks Service, 2 in through 24 in NPS.
  - 10. AWWA C509 Resilient Seated Gate Valves 3 in through 12 in NPS, for Water and Sewage Systems.
  - 11. AWWA C800 Ball Valve Curb Stops and Corporation Stops

- 12. ASTM B-62 Ball Valve Curb Stops
- 13. ASTM D2241 Poly (VinylChloride) (PVC) Plastic Pipe(SDR-PR).
- 14. ASTM D2466 Poly (VinylChloride) (PVC) Plastic Pipe Fittings, Schedule 40.
- 15. ASTM D2855 Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.

#### 1.06 SUBMITTALS FOR REVIEW

- A. Product Data: Provide data on pipe materials, pipe fittings, valves, hydrants and accessories.
  - 1. Backflow Preventer and data design shall be submitted and approved by the City of Waltham Water Department.

#### 1.07 SUBMITTALS AT PROJECT CLOSEOUT

- A. Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Gate Valve: Gate valves for water lines shall be New York Pattern Metropolitan Type or AWWA C500-71, in accordance with requirements of the City of Waltham Water Department. Gate valves shall turn right to open and be rated at 200 psi working pressure; 350 psi hydrostatic test pressure. Gate valve outlet and connection shall be furnished with threaded joints.
  - 1. Gate valve stems shall be manganese bronze having tensile strength of not less than 35,000 psi, and an elongation of not less than 15% in 2 inches.
  - 2. Gate valves shall be furnished with O-ring stem seat that utilizes two O-rings. The upper O-ring shall serve as the pressure seal. The design of the valve and seal plate shall be such that the seal plate can be fitted with new O-rings when the valve is under pressure in the fully open position. Housing for the valve stem thrust collar shall be carefully machined and fully bronze lined.
  - 3. Gate valve disc shall be cast iron and shall be accurately machined to receive bronze disc seat ring. The disc seat ring surface in contact with the iron disc and the conetail projections shall be rolled, peened or pressed

into the machine grooves on the iron discs and when secured in place, a rough and finish cut shall be taken over the disc seat ring bearing surfaces.

4. Gate valve wedges shall be made of bronze.
- B. Ball Valve Curb Stop: Ball valve curb stops for water lines shall be Everett J. Prescott, Inc, 159 Manley Street, Brockton, MA 02301, p 508-586-3875, f 508-586-4694 Type CPPJ X, CPPJ, or approved equal, cast bronze stop and waste, in accordance with requirements of the City of Waltham Water Department. Ball valves shall turn right to open and be rated at 300 psi working pressure; 350 psi hydrostatic test pressure. Ball valve outlet and connection shall be furnished with quick style compression connections.
1. Ball valve shall be furnished with integral checks to allow for 90° rotation only.
  2. Ball valve shall be furnished with one piece cap and stem.
  3. Ball valves shall be furnished with double Buna-N Stem O-Rings and seals.
  4. Ball valves shall be furnished with TFE or Fluorocarbon Coated Brass Ball.
- C. Service Boxes: Each curb stop shall be provided with a service box. Service boxes shall be American made, cast iron and of the adjustable, telescoping, Buffalo type. They shall be so designed and constructed as to prevent the direct transmission of traffic loads to the pipe or valve and shall be made by E.J. Prescott, Pioneer, Quality Water Products, or approved equal.
- D. Service Clamps and Corporation Stops: Complete assembly, including service clamp, corporation stop, and bolts and nuts. Include service clamp and stop compatible with drilling machine.
1. Service Clamp: Cast iron or ductile iron with gasket and AWWA C800 threaded outlet for corporation stop, and threaded end straps
  2. Corporation Stop connection for water lines shall be Everett J. Prescott, Inc, 159 Manley Street, Brockton, MA 02301, p 508-586-3875, f 508-586-4694 Type CC X, CPPJ, or approved equal, cast bronze in accordance with requirements of the City of Waltham Water Department. Ball valves shall turn right to open and be rated at 300 psi working pressure; 350 psi hydrostatic test pressure. Ball valve outlet shall be furnished with quick style compression connection.
  3. Corporation stop shall be furnished with molded nitrile (Buna-N) seals, 80

Durometer, sealed in place with adhesive.

4. Corporation stop shall be furnished with nitrile (Buna-N) O-Ring, 70 Durometer.
  5. Corporation stop shall be furnished with flared copper service fitting threads.
  6. Corporation stop shall be furnished with TFE or Fluorocarbon Coated 85-5-5-5 Red Brass Ball.
- E. Tapping Sleeve and Tapping Valve: Complete assembly, including tapping sleeve, tapping valve, and bolts and nuts. Use sleeve and valve compatible with tapping machine.
1. Tapping Sleeve: Cast- or ductile-iron, 2-piece bolted sleeve with flanged outlet for new branch connection. Sleeve may have mechanical-joint ends with rubber gaskets or sealing rings in sleeve body. Include sleeve matching size and type of pipe material being tapped and of outlet flange required for branch connection
- F. Copper Tubing
1. Copper pipe for buried service shall be soft, annealed, seamless copper tubing conforming to Federal Specification WW-T-799E or ASTM Standard B88-76, Type "K".
  2. Copper service pipe for installation in meter pits, valves, manholes, and backflow preventer cabinets shall be ASTM B88, Type "K", hard copper tubing.
  3. The Contractor shall furnish the Owner with satisfactory evidence that the copper tubing meets the requirements of these Specifications.
  4. Joints in the copper service shall be kept to a minimum.
    - a) For buried application, joints shall be made with cast brass three-part compression couplings or flared tube fittings conforming to ANSI Standard Specifications B 16.26, latest issue. Bends in copper service pipe, particularly gooseneck bends, shall be made with a tool especially designed for the purpose.
    - b) Pipe joints inside meter vaults and backflow preventer cabinets shall be fittings conforming to ANSI B 16.18 cast bronze solder fittings, or ANSI B 16.22 wrought copper solder fittings and couplings. Solder shall be ASTM B32, Grade 95 TA, up to 250

degrees. Solder threaded bronze fittings will be used for connections of pipe to meters, strainers, valves, backflow preventers and pipe nipples.

5. Water Meters

- a) Water meters will be furnished and installed by the City of Waltham.

6. Backflow Preventer

- a) Backflow preventer shall be a Reverse Principle Backflow Prevention Device (or Assembly), Watts #009-M2Q2, or approved equal and shall come complete with strainers, ball valves, and threaded couplings. Final approval of device selection will be based on submittal of design data sheet to Waltham Water Department, Cross Connection Program. Backflow preventer shall be sized as indicated on the Drawings.
- b) Supply one complete rubber parts kit, item number RK009RT 009 which shall include diaphragm, two disc assemblies, stem O-rings, cover O-ring, two seat O-rings and RV seat O-ring, and shall be stored in the backflow assembly cabinet.

8. Concrete for Thrust Restraints: Concrete type specified in Section 03300.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Refer to Section 02200 - Earthwork and the Drawings for excavation, backfill, compaction, and other trenching requirements.

### 3.02 PIPE AND FITTINGS

- A. Pipe, fittings and such other items shall be carefully examined for defects immediately before lowering into the trench and no pipe or fittings shall be laid which is known to be defective in anyway. Any pipe or fitting discovered as defective after laying shall be promptly removed and replaced. Proper and suitable tools and appliances for the safe and convenient handling and laying of the pipe, fittings and appurtenances shall be used, and great care shall be taken to prevent damage to the pipe coating and lining. Pipe and fittings shall be thoroughly cleaned before being lowered into the trench and shall be kept clean until accepted in the completed work. Open ends shall be closed with wooden or other suitable bulkheads at all times when pipe laying is not actually in progress.



Pipes shall be carefully lowered into trenches with rope slings or other mechanical means. Rolling or dropping the pipe into trenches will not be permitted. Whenever the pipe requires cutting to fit the line, the work shall be done only by experienced persons and in such a manner as to leave a smooth end at right angles to the axis of the pipe.

- B. Each length of pipe, fitting or valve shall be firmly supported for its entire length upon original undisturbed trench bottom. Permanent blocking will not be permitted. Where temporary blocking is used, it shall be removed. The underside of the pipe, fittings or valve shall be completely filled and thoroughly compacted with bank gravel before refilling trenches. Fittings and valves shall be carefully set in the line, plumb and true to grade and thoroughly compacted to a firm and uniform bearing.

### 3.03 JOINTING

- A. Jointing shall be in strict accordance with the manufacturer's recommendation for the type of joint being made. Jointing of pipe or fittings shall be made only by persons thoroughly skilled in this work.

### 3.04 ROUGHING-IN FOR WATER METERS

- A. Rough-in piping and specialties for water-meter installation according to utility company's written instructions and requirements.

### 3.05 BACKFLOW PREVENTER, METERS AND RELATED APPURTENANCES

- A. The installation of new backflow preventer and meter and related valves, strainers, hangers, straps, clamps and other appurtenances shall be accomplished in a safe, and complete manner by licensed plumbers.
- B. All work in this regard shall be completed in compliance with City of Waltham standards and industry requirements and to the satisfaction of the project representatives.

### 3.06 CONDUCTING TEST FOR LEAKAGE

- A. Description
  - 1. Test for leakage shall be conducted on all portions of completed water work. In trenches, the testing shall be conducted with partial backfilling over the barrel of the pipe, but all joints between the pipe, fittings and valves shall be left exposed for the duration of the tests. At the Engineer's direction, temporary backfilling of certain portions of the completed work may be required prior to conducting leakage tests.

2. All air shall be released and the mains completely filled with water, and after allowing twenty-four (24) hours for absorption, the internal pressure shall be built up to an equivalent hydrostatic head of three hundred-fifty (350) feet of water of one hundred-fifty (150) pounds per square inch, and so maintained for the full period of tests.
3. All visible leaks in the joints shall be stopped, and any cracks or defective pipe, fitting or valve shall be removed and replaced.
4. The test shall be conducted for a period of at least sixty (60) minutes after all visible leaks have been stopped, and the inflow of water from a force pump to maintain the required pressure shall not exceed seventy (70) gallons per inch of internal diameter per mile of pipe per day.
5. In case the specified rate of leakage is exceeded, the leaks shall be found and repaired, and the mains shall be re-tested until the required conditions are met.

### 3.07 DISINFECTION OF NEW MAINS

#### A. Upon completion, all water mains shall be disinfected as follows:

1. Pipes shall be completely filled with water; all air released, and then thoroughly flushed out in the amount twice the capacity of the section to be treated. A disinfecting solution of sodium hypochlorite shall be introduced into the main near the point of water supply, in the concentration of one hundred (100) parts of available chlorine per million parts of water. The main shall then be washed or bled from the extreme end opposite to the point of application of the disinfecting supply, and the washing continued until tests indicate the disinfecting solution has reached the end opposite to the point of application in the concentration of not less than fifty (50) parts available chlorine.
2. All gates shall then be closed, and the disinfecting solution left in the mains under full pressure for a period of not less than forty-eight (48) hours. The entire section shall then be repeatedly and thoroughly flushed out until all traces of chemicals are removed.
3. Samples of water shall then be taken by the Contractor and laboratory analysis made by him to determine the effectiveness of treatment.
4. Any main or section of pipe failing to meet laboratory standards for disinfecting shall be repeatedly treated until the desired results are obtained. A COPY OF LABORATORY REPORTS SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR WITHIN FIVE (5) DAYS AFTER TESTING IS COMPLETED.

5. Particular attention is directed to the requirement that a double check valve installation shall be made in the water supply to the main under treatment, to prevent possible backflow or siphonage of treated solution into the distribution system in service.

### 3.08 OTHER DATA

- A. All iron castings shall conform to the latest revisions of ASTM Designation A126 for physical and chemical requirements.
- B. All ironwork shall be thoroughly cleaned and painted with two coats of asphaltum or other varnish or paint that the Engineer may approve. After the valves are assembled and tested, a third coat shall be applied to the exterior. All composition tool-finished work shall be left bright and unpainted.
- C. All connections shall be made permanently watertight.
- D. All other work required to complete the improvements listed in the Contract Documents shall be accomplished in accordance with the requirements of the City of Waltham.

END OF SECTION

## SECTION 02670

## BACKFLOW PREVENTER CABINET

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine and coordinate all Contract Drawings and other sections of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to the installation of backflow preventer cabinets

## 1.02 SCOPE OF WORK

- A. Provide all equipment and materials, and do all work necessary to furnish and install one (1) Backflow Preventer Cabinet complete in place on a concrete pad as indicated on the Drawings and as specified.
- B. Service lines, internal cabinet features and other related water work shall be accomplished in accordance with the applicable sections of these Specifications.

## 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition.
- B. Section 02200 - Earthwork.
- C. Section 02667 - Water Service Systems.
- D. Section 02820 - Water Play Equipment

## 1.04 REFERENCE STANDARDS AND SPECIFICATIONS

- A. Reference to specific standards, specifications and tests of the following technical societies, organizations, and governmental bodies may be made in the contract documents.
- B. AASHTO - American Association of State Highway and Transportation Officials (tests or specifications). AASHTO or AASHO
- C. ASTM - American Society for Testing and Materials.

- D. MHD Standard Specifications - Standard Specifications for Highways, Bridges and Waterways, 1988 Edition, the Commonwealth of Massachusetts, Department of Public Works.
- E. AWWA - American Waterworks Association.

#### 1.05 SHOP DRAWINGS/MANUFACTURER'S CUTS AND SPECIFICATIONS

- A. The Contractor shall submit to the Landscape Architect for approval six (6) copies of all materials and equipment proposed for use indicating manufacturers' names and addresses, identifying data and expected delivery dates. No consideration will be given to partial lists submitted from time to time. Intention of using specified materials and equipment shall not relieve the Contractor from submitting the above list, nor shall submission of the list relieve him from submission of shop drawings. Any item of material or of equipment not submitted for approval on the list will not be approved unless of the exact make and characteristics specified.
- B. If the material or equipment is installed before it is approved, the Contractor shall be liable for the removal and replacement at no extra charge to the Owner, if, in the opinion of the Landscape Architect, the material or equipment does not meet the intent of the Contract Documents.
- C. The Contractor shall submit the following information with all equipment shop drawings:
  - 1. Manufacturer's certified scale drawings, cuts or catalogs, including installation details.
  - 2. Manufacturer's specifications, including certified performance characteristics and capacity ratings, if applicable.

### PART 2 - MATERIALS

#### 2.01 BACKFLOW PREVENTER CABINET

- A. The backflow preventer cabinet shall be a standard manufactured item or custom built, conforming to the Contract details and requirements herein. Local sources manufacturers of cabinets are Commercial Sheetmetal Co., Inc., 465 Turnpike Street, Canton, MA 02021, phone 781-828-7900, fax 781-828-3565 or approved equal.
  - 1. Material: 0.125 5052-H32 Aluminum.
  - 2. Subpanel: 12 gauge steel painted white.
  - 3. Hinge: Stainless steel continuous.

4. Main Door: Stainless steel drop handle with 3 point latching and padlock ready.
5. Welding: All seams are continuous weld ground smooth.
6. Door: Gasketed with 1/4" x 1" closed cell neoprene gasket PSA one side to obtain a weather tight seal.
7. Finish: Smooth black powder coat inside and out.

## 2.02 CEMENT CONCRETE

- A. Forms, reinforcing, and cement concrete cast in place for the backflow preventer cabinet shall conform to Section 03300 - Cast-in-Place Concrete of these Specifications.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Include all necessary transportation, shipping and handling as necessary to properly and completely install the specified cabinets.

### 3.02 CONCRETE BASE

- A. Install concrete base as indicated on the Drawings. The concrete base shall be six inches larger than the specified cabinet, all around, and pitched at edges for positive drainage.

### 3.03 TOUCH-UP

- A. Any surfaces of the specified cabinets that are chipped or scratched shall be wire brushed, primed and painted or otherwise restored to a flawless condition in a manner that is acceptable to the City Representative.

END OF SECTION

## SECTION 02725

## DRAINAGE PIPE

## PART I - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine and coordinate all Contract Drawings and other sections of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to the installation of drainage pipe.

## 1.02 SCOPE OF WORK

- A. Under this Section the Contractor shall furnish all materials, equipment, labor, transportation, facilities and all operations and adjustments required for the installation of drainage pipe and all incidentals thereto.
- B. Drainage pipe shall be placed in the sizes and lengths indicated on the plans.

## 1.03 RELATED WORK

- A. Section 01050 - Field Engineering.
- B. Section 01700 - Project Closeout.
- C. Section 02100 - Site Preparation and Demolition.
- D. Section 02200 - Earthwork.
- E. Section 02728 - Drainage Structures.

## 1.04 TRAFFIC POLICE

- A. Traffic police will be required for operations within City streets. Refer to Section 01040 - Control of the Work, Section 1.05 for police requirements and cost.

## 1.05 REFERENCES

- A. The following standards and definitions are applicable to the work of this Section to the extent referenced herein:

1. ASTM A74 Cast Iron Soil Pipe and Fittings.
2. ASTM C76 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
3. ASTM C443 Joints for Circular Concrete Sewer and Culvert Pipe, using Rubber Gaskets.
4. STM D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10 lb. (4.54 kg) Rammer and 18 inch (457 mm) Drop.
5. ASTM D2729 Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
6. ASTM D1248 HDPE(High Density Polyethylene)(HDPE) Pipe and Fittings.
7. ASTM F2648 Test Methods for Non-Pressure (gravity flow) polyethylene (PE) pipes and fittings.

#### 1.06 SHOP DRAWINGS/MANUFACTURER'S CUTS AND SPECIFICATIONS

- A. The Contractor shall submit to the Landscape Architect for approval six (6) copies of all materials and equipment proposed for use indicating manufacturers' names and addresses, identifying data and expected delivery dates. No consideration will be given to partial lists submitted from time to time. Intention of using specified materials and equipment shall not relieve the Contractor from submitting the above list, nor shall submission of the list relieve him from submission of shop drawings. Any item of material or of equipment not submitted for approval on the list will not be approved unless of the exact make and characteristics specified.
- B. If the material or equipment is installed before it is approved, the Contractor shall be liable for the removal and replacement at no extra charge to the Owner, if, in the opinion of the Landscape Architect, the material or equipment does not meet the intent of the Contract Documents.
- C. The Contractor shall submit the following information with all equipment shop drawings:
  1. Manufacturer's certified scale drawings, cuts or catalogs, including installation details.
  2. Manufacturer's specifications, including certified performance characteristics and capacity ratings.
- D. Product Data: The Contractor shall provide data indicating pipe and pipe accessories, connections, etc.

#### 1.07 SAMPLES

- A. The Contractor shall submit all samples as requested in accordance with the



provisions of the General Conditions. Samples accepted will be returned to the Contractor within five (5) days and may be incorporated into the work. Samples not accepted will be returned for disposition by the Contractor.

- B. One (1) square foot filter fabric.

#### 1.08 CODES, ORDINANCES AND PERMITS

- A. All work shall be performed in strict accordance with local and state codes and regulations including OSHA Construction Regulations Title 29 CFR Part 1926.
- B. Site utilities work shall be done in strict accordance with the Commonwealth of Massachusetts State Plumbing Code, latest edition, and all revisions thereto, and City of Waltham Engineering Department and Department of Public Works standards.
- C. Any material or workmanship called for in the above-mentioned requirements, which are not specified or shown on the drawings, shall be furnished and installed by the Contractor as though same has been specifically mentioned or indicated. If the drawings and specifications are at variance with any regulations, the bidder shall notify the Landscape Architect ten (10) days before the date for submitting his bid. In many cases the drawings are in excess of the requirements in the codes and these shall be followed to the fullest. If the Contractor fails to notify the Landscape Architect at this time and installs work in variance with the above-mentioned codes and regulations, he shall assume the responsibility and the expense to rectify the installation.
- D. Before commencing work, the Contractor shall obtain all permits necessary in connection with the installation of this equipment and pay fees required for same. He shall include the cost and back charge of installing any portion of the work where performed by municipal departments or utility companies.

#### 1.09 SUBSTITUTIONS

- A. Any reference to a particular device, product, material, article or system shall be interpreted as establishing a standard of quality, design, performance, or function, and shall not be construed as limiting competition.

#### 1.010 RECORD DRAWINGS

- A. The Contractor shall submit record drawings as specified in Section 01700 - Project Closeout.

#### 1.10 SITE VISITATION

- A. It is recommended that all prospective bidders visit the job site to acquaint

themselves with the general and special conditions that may be encountered which will have a bearing on labor, transportation, cutting and patching, material handling and storage, and similar items, during the prosecution of the work. Failure to do so shall not relieve him of his responsibility for properly estimating the difficulties involved in the work to be performed under this section.

#### 1.11 REFERENCE STANDARDS

- A. References herein to any technical society, organization, group or body is made in accordance with the following abbreviations.
- B. ASTM - American Society for Testing Materials.
- C. AASHTO - American Association of State Highway and Transportation Officials.
- D. AWWA - American Water Works Association.
- E. ANSI - American National Standards Institute.
- F. MHD Standard Specifications: The Commonwealth of Massachusetts Highway Department, Standard Specifications for Highways and Bridges, 1988.
- G. Requirements of the City of Waltham Engineering Department and Department of Public Works.

#### 1.12 MATERIALS AND WORKMANSHIP

- A. It is the intent of these specifications to establish quality standards for all material and equipment incorporated in the work of this section. All material and equipment installed hereunder shall be new and shall be the best of each respective kind and type. Proper care shall be exercised in handling all equipment and materials herein specified.
- B. The installation shall be as indicated on the drawings and in accordance with the manufacturer's recommendations as approved by the Landscape Architect. The installation shall be accomplished by workmen skilled in this type of work.
- C. All conduits, pipes, structures, etc. in use and which are damaged during excavation, whether uncovered or not and whether or not they are shown on the plans, shall be repaired at the expense of the Contractor.
- D. Storage of materials by the Contractor for incorporation into the work shall be off the site for other than material that is scheduled to be installed in the time span of two (2) working days. The storage site selected by the Contractor shall be made accessible to the City inspection forces at all times during normal working hours.

## PART 2 - MATERIALS

### 2.01 GENERAL

- A. Drawings and specifications are intended to supplement and explain each other. Materials not specifically mentioned in the specifications shall be as indicated on the drawings. Where conflicts occur between the drawings or specifications, or within either document itself, the item or arrangement of better quality, greater quantity or higher cost shall be included in the Contractor's bid. Where no specific kind or quality of material is given, a first-class standard article, shall be furnished.

### 2.02 DRAINAGE PIPE

- A. PVC Pipe for use as storm drainage lines shall contain integrally belled and spigot type rubber gasketed joints conforming to ASTM 3034. Gaskets shall conform to ASTM F-477 and shall be marked to indicate nominal pipe size and proper insertion direction. The standard dimension ratio (SDR) of all pipe and fittings shall not exceed 35. Standard pipe lengths shall be twenty (20) feet unless otherwise approved. All necessary glues, gaskets and fittings shall be furnished in order to make the work complete and acceptable to the Engineer.
- B. HDPE Pipe shall be ADS N-12 high density polyethylene pipe (HDPE) as manufactured by Advanced Drainage Systems (ADS), or approved equal, and shall conform to the requirements of AASHTO M-294, and ASTM F2648.
1. HDPE pipe shall be smooth wall perforated where indicated.
  2. Pipe and fittings shall be made of polyethylene compounds which conform to the physical requirements of Type III, Category 3, 4 or 5, P23, P33, or P34, Class C per ASTM D-1248 with the applicable requirements defined in ASTM D-1248. Clean reworked material may be used.
  3. Pipe shall be of the diameters shown on the Drawings.
- C. HDPE Fittings shall conform to:
1. Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the watertight performance of requirements of ASTM F 2306.
  2. Couplers and pipe shall be from the same manufacturer.
  3. Couplers shall be corrugated to match the pipe corrugations and the width shall not be less than one-half the nominal diameter of the pipe. Split couplers shall be manufactured to engage an equal number of corrugations

on each side of the pipe joint.

4. One half inch diameter galvanized steel bolts and nuts or nylon ties as supplied by manufacturer shall be used on coupling bands.

D. Furnish pipe in the sizes indicated on the plans and/or details.

## 2.03 FILTER FABRIC

- A. SUPAC 8NP by Phillips Fibers Corporation, AMOCO 4508, Trevira 1125, Mirafi 180N, or equal.

## 2.04 BEDDING AND COVER MATERIALS

- A. Crushed Stone Bedding: Crushed stone as specified in Section 02200 - Earthwork.
- B. Cover: Gravel as specified in Section 02200 - Earthwork.

## 2.05 APPURTENANCES

- A. Provide all appurtenance and incidentals necessary to make the drainage pipe installation and connection complete and acceptable, including all materials necessary for the excavation, backfill, and compaction.

# PART 3 - EXECUTION

## 3.01 PIPE INSTALLATION

- A. Layout out utilities as required in Section 01050 - Field Engineering. Prior to excavating trenches the Contractor shall field verify all existing inverts and inform the Landscape Architect of any discrepancies. Record these inverts on Record Drawings.
- B. The trench for the pipe shall be excavated to the required line and grade and be of sufficient width to permit thorough tamping of the fill material under the haunches and around the pipe. Soft or unsuitable material encountered below the normal bedding line of the pipe shall be removed as directed, replaced with selected material, gravel or crushed stone and thoroughly compacted. The bottom of the trench shall be shaped to conform to the curvature of the pipe. This bed shall also be excavated to accommodate the bells of pipes.
- C. The pipe shall be laid true to the specified lines and grades where shown on the Plans and as directed. The bell end shall be toward rising grade and each section

of pipe shall have a firm bearing throughout its length. Material placed around and under the pipe shall be free of stones larger than three (3) inches in diameter.

- D. No load greater than three (3) tons shall be moved over any pipe until a fully-compacted backfill of at least two (2) feet has been placed over the top of the pipe. This minimum will be increased to three and one-half (3-1/2) feet for a forty thousand (40,000) pound single wheel load and to four (4) feet for a sixty thousand (60,000) pound single wheel load. However, compliance with these requirements is not to be construed as relieving the Contractor of any responsibility concerning damage to the pipe.
- E. Bedding material for pipes shall conform to the requirements of Section 02200 - Earthwork and shall be placed between the pipe and the walls of the trench in layers not exceeding six (6) inches in depth and thoroughly compacted. Each layer, if dry, shall be moistened and then compacted by rolling or by tamping with mechanical rammers. Compaction with iron hand tampers having a tamping face not exceeding twenty-five (25) square inches in area may be allowed only after permission has been given by the Landscape Architect. Special care shall be taken to thoroughly compact the fill under the haunches of the pipe. This method of filling and compacting shall be continued until the material is level with the centerline of the pipe. The remainder of the filling shall consist of suitable backfill material, as defined in Section 02200 - Earthwork, placed in successive layers not more than six (6) inches in depth. Each layer shall be thoroughly compacted in accordance with AASHTO-T99 Standard Proctor Test.

### 3.02 DRAINAGE PIPE

- A. Any pipe showing settlement after laying or which is not in true alignment or is otherwise unsatisfactory before final acceptance of the work shall be taken up and replaced or relayed by the Contractor without additional compensation.

### 3.03 PERFORATED DRAIN PIPE TRENCH

- A. Following preparation of the subgrade place filter fabric as indicated on the Drawings.
  - 1. The fabric shall be placed across the trench at approximately right angles to its centerline.
  - 2. The fabric strips shall overlap by a minimum of 12 inches.
  - 3. Fabric shall be protected at all times during construction from contamination by eroded material. If contamination occurs, the fabric shall be removed and replaced with uncontaminated fabric.
  - 4. Any fabric damaged during the installation shall be replaced by the

Contractor at no additional cost to the Owner.

5. After installation of the filter fabric the specified filter material shall be placed immediately.
- B. Place, level and compact a 6" bed of underdrain filter material, just prior to placement of underdrain piping.
- C. Place pipe with perforations down and install the pipe in accordance with paragraph 3.01 PIPE INSTALLATION and manufacturer's installation instructions. Lay pipe to the slope and invert elevations shown on the Drawings.
- D. After the pipe installation has been inspected by Engineer, underdrain filter shall be loosely placed around and over the pipe to such a depth that, after compaction, underdrain filter will extend to a level six inches above the underdrain pipe. Subsequent lifts of underdrain filter shall be no more than six inches thick prior to compaction and shall be compacted by two passes of a vibrating pad or drum type compactor.
- E. Place filter fabric over leveled top surface of underdrain filter and lap 12" minimum, prior to subsequent backfilling operations.
- F. Provide all coring, cutting and patching as required to install a fully functioning leaching drain trench ground water recharge system.

### 3.04 WATER REMOVAL

- A. If water is encountered during construction, provisions must be made to remove the water by sheeting and pumping as required, or laying the pipe with a crushed stone bed so that the laying of pipe and other work can be done under stable conditions, all in accordance with Section 2.04 of these Specifications.

END OF SECTION

## SECTION 02728

## DRAINAGE STRUCTURES

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine and coordinate all Contract Drawings and other sections of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to the installation of drainage and sewer pipe.

## 1.02 SCOPE OF WORK

- A. The work to be done under this Section shall include the installation of Catch Basin(s), Manhole(s), and installation of storm water recharge chambers as indicated on the Drawings and as specified. The Contractor shall provide all material, labor, tools, equipment and transportation to complete these items. Frames, grates/covers shall be new or reused based on the particular requirements of the project. Castings not reused shall be delivered to the Municipality's DPW or Highway Storage Yard as necessary.

## 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition.
- B. Section 02200 - Earthwork.
- C. Section 02510 - Bituminous Concrete Paving: Infill for Sewer Manhole Cover
- D. Section 02725 - Drainage Pipe.
- E. Section 03300 - Cast-in-Place Concrete.

## 1.04 TRAFFIC POLICE

- A. Traffic police will be required for operations within City streets. Refer to Section 01040 - Control of the Work, Section 1.05 for police requirements and costs.

## 1.05 REFERENCE STANDARDS AND SPECIFICATIONS

- A. Reference to the standards, specifications and tests of technical societies, organizations and governmental bodies is made in the Contract Documents.
- B. AASHTO - American Association of State Highway and Transportation Officials (tests or specifications).
- C. ASTM - American Society for Testing and Materials.
- D. MHD Standard Specifications: Mass. Standard Specs. - Standard Specifications for Highways, Bridges and Waterways, 1988 Edition, the Commonwealth of Massachusetts, Department of Public Works.
- E. Commonwealth of Massachusetts, Department of Public Works, Construction Standards, 1977.
- F. Municipal Standard Specifications and Procedures, as applicable.
- G. OSHA Construction Regulations Title 29 CFR Part 1926.
- H. Americans with Disabilities Act Accessibility Guidelines (ADAAG).

#### 1.06 CODES, ORDINANCES AND PERMITS

- A. All work shall be performed in strict accordance with local and state codes and regulations.
- B. Site utilities work shall be done in strict accordance with the Commonwealth of Massachusetts State Plumbing Code, dated September 1976, and all revisions thereto.
- C. The Contractor shall secure all permits deemed necessary in connection with the installation of this equipment and pay fees required for same. He shall include the cost and back-charge of installing any portion of the work where performed by municipal departments or utility companies.

#### 1.07 SUBMITTALS / SHOP DRAWINGS

- A. Shop drawings shall be submitted to the Engineer for all equipment. Six (6) copies shall be submitted and shall include cuts, scale drawings, installation details, manufacturer's specifications, certified performance characteristics and capacity ratings.
- B. No material or equipment may be purchased or installed prior to the submission and written approval of the shop drawings.
- C. Product Data: Provide data indicating, catch basins, frames and grates, etc.

### PART 2 - MATERIALS



## 2.01 CLAY SEWER BRICKS (FOR ADJUSTING NEW FRAMES)

- A. Clay sewer brick shall conform to the requirements of AASHTO Designation M91 with the following exceptions:
- B.
  - 1. The size of brick furnished shall be 8" x 3-3/4" x 2-1/4" nominal dimensions.
  - 2. The average of the absorption of five (5) representative samples shall not exceed fifteen percent (15%) and the individual absorption of any one (1) sample shall not exceed seventeen and one-half percent (17-1/2%). The average compressive strength of five (5) representative samples shall not be less than three thousand (3,000) pounds per square inch and the compressive strength of any one sample shall not be less than two thousand five hundred (2,500) pounds per square inch.

## 2.02 CEMENT MORTAR (FOR ADJUSTING NEW FRAMES)

- A. Mortar shall be composed of one (1) part of Portland cement and two (2) parts of sand by volume with sufficient water to form a workable mixture. Cement, sand and water shall conform to the applicable provisions of Mass. Standard Specifications, M4.02.15.

## 2.03 CEMENT CONCRETE

- A. Material shall comply with Section 03300 of these Specifications.

## 2.04 PRECAST CONCRETE DRAINAGE STRUCTURES

- A. All precast concrete units shall conform to Section M4.02.14 of the Standard Specifications in all aspects, and to the City of Waltham Standard Details for Drainage Structures as applicable.
- B. Refer to the Details in the Contract Drawings.

## 2.05 CASTINGS

- A. Iron castings for Catch Basins & Manholes (frames, grates and covers) shall conform to MassHighway Construction Manual standard designs and to the requirements of AASHTO Designation M105, Class No. 30, Gray Iron Castings, unless otherwise specified. Test Bar B, 1.20 inches in diameter.
  - 1. Catch basin frame and grate casting(s) shall be 24" round grate conforming to ADA requirements.
  - 2. Manhole Frames and Covers: Cover shall be of minimum weight of 150

pounds, solid cover, with water tight top flange, without a pick-hole, complying with the requirements of the City of Waltham Engineering Department. Manhole cover shall be recessed and designed to permit bituminous concrete paving infill for the center surface.

## 2.06 STORM WATER RECHARGE CHAMBERS

- A. Recharge units and accessories shall consist of high molecular weight/high density polyethylene material. The chambers and all accessories shall be suitable for AASHTO HS20-44 loading. The units shall be manufactured in accordance with AASHTO M-294. Joints and fittings shall conform to AASHTO M-252. Shop Drawings and Design Details shall be submitted to the Engineer for review.
- B. Stormwater Retention System Filter Aggregate (Bedding): Shall consist of crushed stone that is hard, durable stone, free from clay, loam, or deleterious material. The material shall consist of 1-1/2" stone. Gradation shall conform to Section M2.01.1 of the "Standard Specification".
- C. Provide clean-out structures as shown on the Drawings.

## PART 3 - EXECUTION

- 3.01 Structures of various types and depths shall be constructed to the line and grades, dimensions and design shown on the plans and as directed with the necessary frames, gratings, covers, aluminum steps, etc., and in accordance with these Specifications after verification of inverts of utilities to remain.
- 3.02 The bricks and blocks (if required) shall be wetted as necessary before laying. All joints in brick masonry shall be thoroughly flushed full of mortar and no joints on the inside face shall be greater than one-quarter (1/4) inch. After the bricks and blocks are laid up, the outside of the structure shall be plastered with one-half (1/2) inch thick mortar coat.
- 3.03 Connections will be carefully made to all existing and proposed lines to the grades and elevations shown on the contract drawing.
- 3.04 All catch basins shall have a cast iron hinged metal hood trap installed over the outlet pipe or an oil trap outlet as detailed in the drawings. Use twelve (12) inch hoods, unless sizes equal to the specified pipe sizes are available.
- 3.05 Unless otherwise directed or specified, two (2) weep holes shall be built into the walls of all new structures. Each weep hole shall consist of a section of four (4) inch pipe or equivalent opening to carry water through the wall of the structure. The outside end of the pipe or opening shall be covered with a one-quarter (1/4) inch mesh galvanized wire screen 23 gauge satisfactorily fastened against the wall. The drain to the weep hole shall be excavated and back-filled with two (2) cubic feet of broken rock or crushed stone. The crushed stone shall be placed against and over the end of the pipe or opening with a

section of filter cloth to prevent the entrance of fine material. Only one (1) type of weep hole shall be used consistently throughout the project.

- 3.06 Suitable materials obtained from the excavation or from borrow shall be placed between the outside of the structure and the limits of the excavation, uniformly distributed in successive layers not exceeding six (6) inches in depth and thoroughly compacted by tamping with mechanical rammers or tampers. When required, the backfill material shall be moistened during the compacting. Compaction with iron hand tampers having a tamping face not exceeding twenty-five (25) square inches may be allowed, but only after permission has been given by the Engineer.
- 3.07 All materials removed in the excavation for catch basins, manholes, or storm water recharge units and remaining after the filling about the finished structure has been made shall be used wherever possible within the project or removed and satisfactorily disposed of outside of the project limits without additional compensation.
- 3.08 The embedded ends of the aluminum ladder steps shall be painted with zinc chromate or bitumastic, and allowed to completely dry before they are installed. Installation shall be as shown on the plans.
- 3.09 Frame castings for structures shall be set in full mortar beds true to the lines and grades as directed.
- 3.10 Where directed, the castings shall be temporarily set at such grades as to provide drainage during the construction.
- 3.11 In general, all methods for installation of the catch basin and manhole units, brick adjustments and mortaring, and installation of frames, grates and covers, shall conform to Section 201 of the "Standard Specifications".
- 3.12 Installation of Storm Water Recharge Units:
- A. Form bottom of excavation clean and smooth to correct elevation.
  - B. Stormwater recharge chambers shall be installed as per manufacturers requirements and guidelines, and as shown on drawings.
  - C. Establish elevations and pipe inverts for inlets and outlets as indicated.

END OF SECTION

SECTION 02800  
SITE FURNISHINGS

PART 1- GENERAL

1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.

1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, and as indicated on the Drawings and as specified.
- B. The work shall include, but is not limited to, the following:
1. Benches
  2. Picnic Tables (Add Alternate #1)
  3. Trash Receptacles (Add Alternate #1 and Base Bid)
  4. Bicycle Loops

1.03 RELATED SECTIONS

- A. Section 02200 - Earthwork.
- B. Section 02510 - Bituminous Concrete Paving.
- C. Section 03300 - Cast-in-Place Concrete.

1.04 SUBMITTALS

- A. Submit the following in accordance with the requirements of section 01300 - Submittals:
1. Benches, Picnic Tables and Trash Receptacles: Manufacturers catalog cuts, specifications, and color chart, demonstrating compliance with the Specifications.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle metal fabrication items to prevent damage and deterioration. Store assembled items off the ground.

## 1.06 REFERENCE STANDARDS

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein:
1. American Institute of Steel Construction, (AISC).
  2. American Welding Society, (AWS)
  3. American Society for Testing and Materials, (ASTM).
  4. National Association of Architectural Metal Manufacturers, (NAAMM).
  5. Americans with Disabilities Act Accessibility Guidelines (ADAAG)
  6. Massachusetts Architectural Access Board Regulations, CMR 521 (MAAB)

## 1.07 EXAMINATION OF SITE AND DOCUMENTS

- A. The Contractor shall inform him/herself of existing conditions of the site before submitting his/her bid and shall be fully responsible for carrying out all required site work to fully and properly execute the work of the Contract.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Steel fabrication for site improvements shall be accomplished using the highest standards of workmanship. Individual steel pieces to be welded shall be saw cut and carefully fitted together. All connections shall be full welded and ground flush and smooth. All fabricated steel items shall be fine sanded throughout prior to finishing to produce a high standard of surface smoothness. All surfaces and connections shall be without visible grinding marks, surface differentiation or variation.
- B. Arc welding procedures shall conform to the current standards of the AWS. All welds shall be as designated on the plans and shall be ground smooth and flush to a neat finish. All welds shall be watertight and care shall be taken to minimize distortion due to heat. Metal shall not be primed, painted or galvanized before welding.

### 2.02 BENCHES

- A. Benches shall be manufactured by Wabash Valley Manufacturing Inc., 505 East Main Street, Silver Lake, IN, as supplied by M.E. O'Brien and Sons, Inc., 93 West Street, MA or approved equal as follows:
1. Coating for these items shall be 1/4 inch plastisol coating, heat-fused and permanently bonded to the steel.

2. Color for benches, picnic tables and bicycle loops shall be chosen by the Landscape Architect/Owner from manufacturer's standard color choices.
- B. Backless bench shall be Wabash Valley Bench Model CN435(P), 6' Bench without back - In- ground, Contemporary Series, Perforated Pattern, without back, suitable for in-ground installation, or approved equal.
- C. Benches with backs shall be Wabash Valley Bench Model CN 430(P), 6' bench with back - In - ground, Contemporary Series, Perforated Pattern, with back, suitable for in-ground installation, or approved equal.

#### 2.03 PICNIC TABLES (Alternate #1)

- A. Picnic Tables shall be one (1) DuMor Model 100-80PL 8' Picnic Table, 678 lbs and one (1) 100-68PL Accessible Picnic Table, 630 lbs, or approved equal.
1. Picnic table slats shall be 3" x 4" nom. and 3" x 6" nominal high density recycled polyethylene plastic.
  2. Supports for picnic tables shall be steel, galvanized and polyester powder-coated.
    - a) Supports shall be embedment option.
  3. Fasteners shall be stainless steel.
  4. Color of slats and steel supports shall be chosen by the Landscape Architect/Owner from manufacturer's standard color choices.

#### 2.04 BICYCLE LOOPS

- A. Bicycle loops shall be "Heavy Duty Hoop Rack" as manufactured by Dero Bike Rack Company, Minneapolis, MN (Tel 612-359-0689), or approved equal.
1. Pipe for loop shall be 2" schedule 40 minimum.
  2. Finish for steel loop shall be TGIC UV resistant powder coat of no less than 6 mils thickness.
    - a) Prior to application of powder coat, steel shall have been prepared for painting by hard sandblasting, and then coated with an epoxy primer electrostatically applied. .
  3. Color shall be chosen by the Landscape Architect/Owner from manufacturer's standard colors.

## 2.05 TRASH RECEPTACLES (Alternate and Base Bid)

- A. Trash receptacles shall be Custom DuMor Trash Receptacles, Model No. 66-725-32-FTC with hinged side door, or approved equal.
1. Body: 1/4 inch (6 mm) steel with 18 gauge internal steel shield.
  2. Height: 41-1/8 inches (1044 mm).
  3. Diameter: 26-3/4 inches (669 mm).
  4. Top and Bottom Edge: 3/8 inch by 2 inch (10 by 50 mm) steel bar.
  5. Liner: 32 gallon (145 l) plastic.
  6. Cover: 14 gauge (1.98 mm) spun steel, solid.
  7. Hinge: Stainless Steel mounting:
  8. Surface plate with 1/2 by 3-3/4 inch (12.5 by 95 mm) stainless steel expansion anchor bolts
- B. Steel shall be galvanized and finished with a polyester Powder coat chosen by the Landscape Architect/Owner from manufacturer's standard colors.

## PART 3 - EXECUTION

### 3.01 GENERAL REQUIREMENTS

- A. Site improvements shall be fabricated and fastened in accordance with the Drawings and approved Shop Drawings. Site improvements shall be installed in a level, plumb condition, true to the lines and grades shown on plans.
- B. The Contractor shall be responsible for timing the delivery of items so as to minimize on-site storage time prior to installation and the Contractor shall handle site improvement materials and products in such a manner as to minimize any damage to the products' finish. Stored materials and items must be protected from weather, careless handling and vandalism. Suitable touch-up material shall be readily available to repair any damage immediately.
- C. Shim bolt connections as necessary and secure bolts. Exposed bolts shall be fastened with an approved semi-permanent adhesive to protect against vandalism.
- D. Install site furniture level and plumb, true to line and grade, and at height shown on the Drawings and recommended by the manufacturer.
1. Install ADA-accessible picnic table to the height required to conform to ADA guidelines.
- E. Field touch-up all abraded or scratched surfaces with manufacturers recommended paint and/or cold galvanizing materials.

### 3.02 CONCRETE FOOTINGS

- A. Cast-in-place concrete footings for site improvements shall be conform to the requirements of Section 03300 - Cast-in-place Concrete and shall be 4,000 psi minimum strength at 28 days.
- B. Compacted gravel backfill shall conform to the requirements of Section 02200 - Earthwork.

END OF SECTION



## SECTION 02820

## WATER PLAY EQUIPMENT

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. 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.

## 1.02 SCOPE OF WORK

- A. Under this Section, the Contractor shall be responsible for furnishing and installing water play features, controller, water piping and wiring, and below ground equipment vault associated with the construction of the water play area. This includes plumbing connecting the spray features to equipment vault, electrical supply equipment including all grounding, and electrical connection between the activators and controller. All work shall be performed as indicated on the Contract Drawings and Specifications and shall include every aspect of work as obvious or implied and necessary to make the work complete and fully operational.
- B. Provision of two year warranty and maintenance, including training of City personnel.

## 1.03 QUALIFICATIONS

- A. The Contractor performing all of the plumbing related work of this Section shall be a Massachusetts Licensed Master Plumber.
- B. The Contractor performing all of the electrical related work of this Section shall be a Massachusetts Licensed Electrician.

## 1.04 RELATED WORK

- A. Section 02200 - Earthwork
- B. Section 02510 - Bituminous Concrete Paving
- C. Section 02667 - Water Service Systems
- D. Section 03300 - Cast-in-Place Concrete

## 1.05 SUBMITTALS

- A. Provide manufacturer's information and catalog cuts for the following: Water Play Features, Water regulators, Valves, Valve boxes and Controllers including wiring diagrams.

- B. Shop Drawings: Show water play equipment, including plan layout and locations, types, sizes, capacities, and flow characteristics of water play piping components. Include connections to water meters, backflow preventers, valves, piping, accessories, controls, and wiring. Show areas of sprinkler spray and overspray.
- C. Coordination Drawings: Indicate interface and spatial relationship between water play elements, water supply, drainage, and electrical connections.
- D. Maintenance Data: Include complete maintenance instructions for system.

#### 1.06 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- B. Comply with ASTM F 645, "Guide for Selection, Design, and Installation of Thermoplastic Water Pressure Piping Systems."
- C. Comply with NFPA 70, "National Electrical Code," for electrical connections between wiring and electrically operated devices.

### PART 2 - MATERIALS

#### 2.01 GENERAL

- A. The water play features and equipment vault with mechanical and electrical equipment and controls shall be as manufactured by Vortex Aquatic Structures International, Inc., of Montreal, Quebec, Canada (Telephone #1-514-948-0096 or approved equal. Vortex is locally represented by O'Brien & Sons, Inc. (1-508-359-4200). **Note that the vault shall be furnished without the pre-packaged backflow preventer.** A backflow preventer shall be furnished and installed as stipulated in Sections 02667, Water Service Systems and Section 02670, Backflow Preventer Cabinet.

- |    |                  |                       |
|----|------------------|-----------------------|
| 1. | (1)VOR-611.2008  | Bollard Activator     |
| 2. | (2)VOR-519.0000  | Spray Loop            |
| 3. | (1)VOR-7372.2008 | Three Bells           |
| 4. | (4)VOR-303.1000  | Rooster Tail          |
| 5. | (4 VOR-301.1000  | Ground Geyser         |
| 6. | (6)VOR-305.4000  | Directional Water Jet |

- |     |   |  |
|-----|---|--|
| 7.  | (1)VOR-7530.2000  | Aquadome No. 2   |
| 8.  | (1)VOR-7510.0000  | Magic Mist   |
| 9.  | (1)VOR-7020.0000  | Foaming Geyser No.   |
| 10. | (1) VOR-1608.3500R05<br>VCC 8V BFP, PR 2x2" /<br>50mm with RLC          | Equipment Vault <b>without pre-packaged backflow preventer</b><br>(Refer to 02820-3)             |
| 11. | (1) VOR-710.6000R01 FT<br>Smartflow 2 Controller, 10<br>Output (120VAC) | 10 Station Vortex Controller to be<br>installed in the Electrical Equipment<br>Enclosure Cabinet |

## 2.02 PLAY COMPONENTS

- A. Bollard Activator shall be constructed of 304/304L stainless steel structural tubing with an outside diameter of 4-1/2 " and a wall thickness of 0.120". The activator shall have no moving parts and run on a low voltage electrical supply. A 14 AWG-2 wire conductor is to be used for the electrical connection. The activation cap shall consist of a high impact-resistant protective cap and a piezo switch. The protective cap shall be constructed of polished stainless steel and shall be secured in place using tamper-resistant fasteners. The Safeswap anchoring and leveling system shall be used. The bollard activator shall have an overall height of 39" above the final grade. The bollard activator shall be the direct interface between the users of the aquatic play area and the aquatic play elements. The pre-programmed sequences of the play features shall be activated only when the touch-activated sensor cap on the bollard activator is touched by the user.
- B. Spray Loop shall be constructed of 304/304L stainless steel structural tubing with an outside diameter of 3-1/2" and a wall thickness of 0.120". The loop shall be constructed of one continuous piece of tubing rolled to no less than a 72" diameter with no joints or ripples. The loop shall be mounted on a reinforced base plate to facilitate installation. The embedded anchoring and leveling system shall be used. The overall height shall be 76". The loop shall have five (5) stainless steel nozzles that produce a misty water effect. The combined hydraulic requirements of all five (5) spray nozzles shall be 10-15 gpm @ 10-25 psi.
- C. The Three Bells shall be constructed of 304/304L stainless steel structural tubing with an outside diameter of 4-1/2" and a wall thickness of .120". There shall be three (3) horizontal, interchangeable, support arms with a total of (3) three dumping bells. Each interchangeable spray are shall be attached to the main structure using a watertight tamper resistant joint. There shall be (1) one dumping bell per arm. Each bell shall be constructed of translucent Seeflow polymer or approved equal with an integated externally mounted counterweight system and

deflector plate. The counterweight system and selectale mounting orientation will determine the bell's main dumping direction. The bell's deflector plate shall minimize any potential collection of debris from acts of vandalism. The Safeswap anchoring and leveling system shall be used. The overall height of the structure shall be no less than 132" with a head clearance of not less than 105". Each dumping bell shall have a 1" stainless steel fill spout and an incorporated drain pilot hole to prevent an accumulation of stagnant water during non-operational hours. The volume of water dumped from each bell shall be no less than 3/4 of a US gallon and no greater than 1-1/2 US gallons. The combined hydraulic requirements of all three (3) bells shall be 9-15 gpm @ 5-10 psi.

- D. The Rooster Tail shall be constructed of 304/304L stainless steel with an outside diameter of 4-1/2". The brass spray cap and winter cap shall be fastened to the body using tamper-resistant fasteners. Tamper resistant winter caps shall be included. The anchoring system shall have an integrated leveling system facilitating installation and a plumb finish to the deck surface. The spray cap shall have a thirteen (13) hole-pattern angled at 33 and 45 degrees from the vertical. The upper row shall consist of seven (7) holes equally spaced and angled at 33 degrees. The lower row shall consist of six (6) holes equally spaced and angled at 45 degrees, creating a fan-like spray pattern. The hydraulic requirements shall be 10-15 gpm @ 5-10 psi.
- E. The Ground Geyser shall be constructed of 304/304L stainless steel with an outside diameter of 3" and a wall thickness of 3/4". The brass spray cap and winter cap shall be threaded into the geyser body using a tamper-resistant tool. Tamper resistant winter caps shall be included. The anchoring system shall have an integrated leveling system facilitating installation and a plumb finished to the activity deck surface. The spray cap shall have a ten (10)-hole spray pattern angled at 5 degrees from vertical so that multiple streams spray water out at symmetrical angles forming a fountain effect. The hydraulic requirements shall be 5-10 gpm @ 5-10 psi.
- F. The Directional Water Jets shall be constructed of 304/304L stainless steel with an outside diameter of 3" and a wall thickness of 3/4". The spray head housing shall be fitted with a spray cap assembly consisting of a brass locking ring and an adjustable brass spray sphere. The nozzle system shall be free of finger entrapment hazards. The anchoring system shall have an integrated leveling system facilitating installation and a plumb finished to the activity deck surface. The water effect from the spray head shall produce a single soft stream adjustable from the vertical position to a maximum of 25 degrees from vertical. The spray head shall be capable of being rotated to a water-tight winterized position. The hydraulic requirements shall be 3-5 gpm @ 5-10 psi.
- G. The Aqua Dome No. 2 shall be constructed of 304/304L stainless steel structural straight tubing with an outside diameter of 4-1/2" and a wall thickness of 0.120". The Safeswap or equal anchoring and leveling system shall be used. The overall

height of the element shall be no less than 72". The spray effect shall be a clear, laminar bell shaped, sheet. Hydraulic requirements shall be 10-18 gpm @5-10 psi.

- H. The Magic Mist shall be constructed of 304/304L stainless steel structural tubing with an outside diameter of 4.5" and a wall thickness of 0.120". The powder coat painted stainless steel spray cap shall be fastened to the body using tamper-resistant fasteners. The spray cap shall be removable and shall have three (3) stainless steel nozzles staggered around the domed spray cap. Each nozzle shall be formed to the surface of the structure to eliminate finger entrapment and protrusion hazards. The Safeswap anchoring and leveling system shall be used. The spray cap shall create a water mist effect. The hydraulic requirements shall be 6-9 gpm @ 10-25 psi.
- I. The Foaming Geyser shall be constructed of 304/304L stainless steel structural tubing with an outside diameter of 3-1/2" and a wall thickness of 0.120". The Safeswap anchoring and leveling system or approved equal shall be used.

## 2.03 CONTROLLER

- A. VOR-710.6000 SmartFlow 2.0™ Splashpad Controller: The Splashpad programmable logic controller shall be sized according to the number of outputs it is required to control. The programmable logic controller shall be factory programmed with a spray sequence designed according to the requirements of the project. It shall have the flexibility to user modify the sequences using a DataKey memory stick. A battery backup shall protect the system memory and time setting.
- B. A 24hr/7day user programmable time switch, which shall allow the user to set the operational hours of the facility, shall be incorporated into the operating system. The time switch shall have the ability to be programmed with two different operating periods for each day of the week or a weekday and weekend periods.
- C. The operating system shall be supplied with a membrane user interface with controls for each output, activation device(s), and time switch. The 4 lines 20 characters display screen shall be visible to 3ft, with a 45 degree viewing angle and contrast adjustment.
- D. The operating system shall be housed in a corrosion resistant NEMA 4X rated enclosure.
- E. The operating system shall have the capacity to receive signals from activation devices, operating on 24VDC.
- F. The operating system shall have the capacity to operate based on a programmed sequence or based on a randomly generated sequence. In random mode each touch of the activator will generate a new unique sequence.
- G. The operating system shall have the capacity to operate in five different languages which can be changed on site by the user. Languages available: English, French, Spanish, German and Italian.

- H. The operating system shall have the ability to softstart ramp up the Splashpad to minimize potential water hammer.
- I. The operating system shall have the capacity to operate a Rain Diverter Valve to prevent rain water to go into the sewer network when the Splashpad is not in function.
- J. The operating system shall have the option of using a membrane keypad locking mechanism, requiring a user configurable password to access the Controller functions.
- K. The operating system shall have the ability to automatically purge all water lines based on the user selected time and duration (i.e. every day at 5 am). It shall also, be configured to purge all lines after a user defined period of inactivity (i.e. after 4 hours of inactivity).

## 2.04 COMMAND CENTER

- A. General Materials Specifications:
  - 1. Stainless Steel Structural Tubing: Shall be type 304/304L, structurally strong, durable, and resistant to corrosive environments. Rigid centricast fiber reinforced (FRP) and/or molded fiberglass, PVC, filament wound tubing, Galvanized Steel, or Aluminium shall **not** be utilized for any distribution systems manifolds.
  - 2. Bronze: All Backflow devices and Pressure Regulators shall be manufactured from bronze. Plastics such as PVC, and Nylon shall not be utilized.
  - 3. Painted Finish: Shall be a polyester smooth glossy heat-cured powder coat that is UV and chemical resistant.
- B. Mounting and Assembly Hardware: Shall be 304/304L stainless steel. Exposed and accessible hardware shall be tamper resistant, requiring a special tool for removal to deter vandalism and theft.
- C. Safety & Craftsmanship: All edges shall be machined to a rounded edge. All welds shall be watertight, buffed smooth, or polished to a non-visible finish and factory pressure tested. Accessibility to the water distribution systems shall be such that no permit for confined spaces would be required as per OSHA Standards.
- D. Subterranean Command Center: The Subterranean Command Center shall be a pre-fabricated water distribution system containing piping, valves and electrical wiring. They shall be factory assembled; water pressure tested, and shall be delivered from the Splashpad equipment manufacturers facilities. They shall be equipped with threaded connections for the water inlet and water outlets. The

solenoid valves shall be pre-wired to the controller or to a junction box (when the controller is placed in a remote location). The installer shall provide the plumbing equipment required from the water source to the water inlet or backflow device and pressure regulator if so configured. The installer shall provide the plumbing equipment required from the water outlets to the play elements, as well as adequate drainage ball valves at the low point of each of the play element's water distribution lines (if applicable). Should the controller be located remotely, the installer shall supply the electrical equipment required from the junction box to the controller.

- E. Subterranean Command Centers: Shall consist of a reinforced frame and access hatch suitable for use in public spaces. The side walls shall be paneled with PVC sheets predrilled for all applicable water line inlets and outlets. The access hatch shall be constructed of 1/8" thick, reinforced; powder coat painted checker plate, and shall be lockable using a standard padlock. For equipment servicing, an integrated corrosion resistant step down pedestal/seat shall be included. All hardware shall be stainless steel.
- F. Water Distribution Manifolds: Shall be constructed of 3 1/2" outside diameter stainless steel structural tubing with a power coat painted finish. Each water distribution port shall be a 1-1/2" NPT connection. The manifold shall be equipped with a pressure gauge. All welded joints shall be watertight and pressure tested to 150 psi.
- G. Solenoid Valves: There shall be one (1) solenoid valve installed on each of the water distribution ports for the play elements. They shall be a normally closed 24 VAC 50/60 cycle solenoid actuated globe/angle pattern design. The valve pressure rating shall not be less than 150 psi. The valve body and bonnet shall be constructed of PVC with stainless steel fasteners. The valve shall have a manual override capability (manual open/close control). It shall house a fully encapsulated, one-piece solenoid. Each Solenoid valve shall have in integrated flow control adjustment valve stem for fine tuning of spray effects.
- H. Piping and Fittings: All piping and fittings shall be schedule 80 PVC. All factory-assembled components, fittings and connections shall be water pressure tested prior to delivery.
- I. Electrical Enclosures, Conduit, Wiring and Connections: All electrical wiring shall be # 16 AWG with a 600V rating. All electrical connections, enclosures, and conduit shall be Nema 4x watertight.

## 2.05 PIPING MATERIALS

- A. PVC Pipe: Pipe shall be Schedule 80, solvent weld, ASTM No. D-1785 sized as shown on the Drawings and Details as manufactured by Creline or approved equal.

- B. Fittings: Fittings for all PVC piping shall be Schedule 80, solvent weld PVC as manufactured by Dura, Lasco, or approved equal.
- C. Solvent: PVC solvent shall conform to ASTM and be NSF approved. Solvent shall be appropriate for gluing of pipes and fittings up to 6 inches in size. Solvent shall be as manufactured by IPS, Rectorseal, UniWeld, or approved equal and shall be used in conjunction with an appropriate primer.

## 2.06 CONCRETE

- A. Cast-in-place concrete for use in water spray feature foundations and footings shall conform to Section 03300, Cast-in-Place Concrete.

## 2.07 SAND

- A. Sand borrow for pipe bedding shall conform to Section 02200, Earthwork.

## 2.08 THRUST BLOCKS

- A. Concrete thrust blocks shall be installed in locations as indicated on the Drawings. Installation of thrust blocks shall include furnishing and placing the concrete and any additional excavation as required. Straps in conjunction with thrust blocks shall be furnished and installed where shown on the plans or directed by the Landscape Architect.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Install manufactured items in strict conformance with the requirements of the manufacturer, the Drawings, and as directed by the Landscape Architect. Where the Drawings and the manufacturer's details differ, the Drawings shall be followed.

### 3.02 LAYOUT

- A. Accurately layout play elements horizontally and vertically such that required finish grades of surrounding paving can be achieved.

### 3.03 GROUNDING

- A. Each play element shall be separately grounded with a UL listed compression cooper grounding lug. Attach to each spray feature in a continuous loop and back to grounding bus.



### 3.04 PIPE AND FITTINGS

- A. The installation and backfilling of pipe, fittings and other related items shall be installed and tested in conformance with the requirements set forth in Section 02667, Water Service Systems. **Pipe shall be set with a minimum cover of 24" above the invert of the pipe.**
- B. The installation of the electrical service to the equipment vault shall be performed in conformance with Section 16100, Electric Service Improvements.
- C. Pour concrete foundations and footings to the dimensions indicated on the Drawings. Footing and foundation sizes shown on the Drawings shall take precedence over those shown on manufacturer's details.
- D. Install manufactured items in strict conformance with the requirements of the manufacturer and as shown on the Drawings. Where a conflict exists between manufacturer's details and detailing on the Drawings, the Drawings shall take precedence.

### 3.05 FLUSHING OF PVC SUPPLY LINES

- A. **Prior to start up and testing of water spray elements**, remove all spray nozzles from play elements and flush PVC supply lines to remove sand, PVC pipe shavings and other debris. Flush until water runs completely clear to prevent nozzles from being plugged with grit.

### 3.06 TRAINING

- A. At Substantial Completion, provide complete operations and maintenance manuals for all water spray components to the City Representative.

### 3.07 WARRANTY & MAINTENANCE

- A. Contractor's Warranty:
  - 1. The working of the water play system shall be fully warrantied by the Contractor against plumbing, mechanical, and electrical defects for a period of one year after the date of Substantial Completion of the project, a period which will include one full season of use. The water play system is defined as water play features, water piping and wiring from the features to the below ground equipment vault, and equipment within the vault. The Warranty shall provide for the cost of labor and materials to repair the system in good working condition. Where defects are covered by the Manufacturer's warranty, the Contractor shall be responsible for obtaining replacements from the manufacture, as well as providing labor or other costs not reimbursed by the manufacturer necessary to restore the

system to good working condition.

**B. Contractor's Maintenance Period**

1. The Contractor shall be responsible for two system start-ups and two system close-downs, over the period of two years.
  - a. For start-ups and shut-downs, the Contractor shall be solely responsible for performing all required procedures including draining, yearly maintenance recommended by the manufacturer, and any other tasks normally associated with start-up and shut-down.
  - b. At the Contractor's last shut-down in the second season of operation, the Contractor shall schedule the shut-down to include City Representatives, including a representative from the City of Waltham Water and Sewer Division of the Engineering Department, to whom he will teach shutdown and start-up procedures.

END OF SECTION

## SECTION 02825

## CHAIN LINK FENCING

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. 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.
- B. Examine and coordinate all Contract Drawings and other sections of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract.

## 1.02 SCOPE OF WORK

- A. Work under this Section includes installation of a 6' ht. vinyl-clad chain link fence and gates in the locations shown on the drawings using salvaged components of existing fence and new components as necessary to be supplied by the Contractor.
  - 1. Items for re-use include chain link fence fabric, top and bottom rails, tension bars, rail clamps, and line post caps, and one set of gates.
  - 2. It shall be the Contractor's option to salvage existing fence posts and end post caps or supply new. Re-used posts shall be unbent, full length, and touched up with galvanizing and vinyl coating where finish has been damaged by construction operations.
  - 3. New items to be furnished include ties, and one set of gates.
  - 4. Supply additional posts, fabric and all other chain link fence components needed if the quantity of salvaged items is less than needed to install the quantity of fence shown, or if salvaged items are damaged or missing.

## 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition
- B. Section 02200 - Earthwork
- C. Section 03300 - Cast-in-Place Concrete

## 1.04 REFERENCE STANDARDS

- A. Comply with standards of the Chain Link Fence Manufacturer's Institute.

## 1.05 SUBMITTALS

- A. Submit manufacturer's product literature for all new items demonstrating compliance with the Specifications.

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Packaged materials shall be delivered to the site in original, unopened and unaltered containers clearly indicating the manufacture, brand name, lot or serial number and other identifying information.
- B. Materials shall be stored in a dry location, off the ground and in such manner as to prevent damage, intrusion of foreign matter and weather. All materials which have become damaged or otherwise unfit for use during delivery or storage shall be replaced at the expense of the Contractor.
- C. The Contractor shall be responsible for timing the delivery of items so as to minimize onsite storage time prior to installation. Stored materials and items must be protected from the weather, careless handling and vandalism.
- D. Contractor shall handle, pack and transport in a manner to minimize damage to the finish of materials. Upon arrival at the job site, it is the responsibility of the contractor to take equal precautions. Should minor damage occur to the finish the contractor shall restore damaged finishes and test for proper function. Clean and protect work from further damage.
- E. Handle and store salvaged chain link fence components in a way to prevent damage and deterioration.

### PART 2 - PRODUCTS

#### 2.01 Vinyl Coated Chain Link Fence

- A. Fabric shall match existing fabric in all respects and shall meet the following requirements as a minimum:
  - 1. Wire shall be galvanized 9 gauge (.148") core measured prior to PVC coating.
  - 2. Wire finish: Wire shall have a polyvinyl chloride (PVC), plastic resin finish, factory applied over galvanizing prior to fabrication of fabric. Thickness of PVC coating shall be not less than 7 nor more than 20 mils thick. PVC coating shall be applied by the thermal fusion method over a thermoset plastic bonding agent. The bond shall exhibit equal or greater strength than the cohesive strength of the vinyl. All cut ends shall be coated with vinyl at the factory. PVC coated wire shall be capable of being woven into fabric without the PVC coating cracking, crazing, or peeling. Color shall be black to match existing
  - 3. Top and bottom selvages shall match finish of existing fabric.

**B. Framework (Posts, Rails, and Gate Frame)**

1. Steel parts shall be hot-dipped galvanized inside and out prior to vinyl coating. Pipe shall be Type 1, ASTM F 1083 round cold-formed steel standard weight Schedule 40, Minimum yield strength shall be 25,000 psi. Galvanizing shall conform with ASTM A-120 standard weight Schedule 40 except the hydrostatic testing requirement is waived.
2. Galvanized steel parts shall be coated with a polyvinyl chloride (PVC) plastic resin finish. PVC coating for framework shall meet the above specifications for fabric coating. Frame color shall match fabric color.
3. Sizes for fence posts, gate frames and other framework members shall be as shown on the Drawings.
  - a) Weights for posts shall be as follows:

Outside Diameter (Inches)	Minimum Pounds per Foot Tolerance $\pm 5\%$
1.66	2.27
2.375	3.65
2.875	5.79
4.00	9.11

4. Provide continuous top rails in manufacturer's longest lengths, with expansion type couplings for each joint. Provide necessary fittings for attaching top rail to each gate, corner, pull and end post.

**C. Hardware and accessories: Provide galvanized (ASTM A153) PVC-coated accessories. PVC coating for accessories shall meet the above specifications for fabric coating. Nuts and bolts shall be galvanized but not vinyl coated. Nuts and bolt heads shall be coated with PVC touch-up paint after installation to match fabric color.**

1. Post Tops: Galvanized, pressed steel or malleable iron, weather tight closure caps, 1 top for each post. Where top rail is used, provide tops with openings to accommodate top rails. Provide one (1) acorn-style cap for each end, corner or gate post.
2. Stretcher Bars - One piece lengths with minimum cross section of 3/16" x 3/4". Provide one (1) cross stretcher bar for each end post and two (2) for each corner and pull post.

3. Stretcher Bar Bands - Heavy pressed steel or malleable iron of 1/8" x 3/4" minimum cross section and be of sufficient size to secure stretcher bars to end, corner and pull posts.
  4. Rail clamps to be standard clamps (boulevard clamps) furnished complete with fasteners with ASTM Designation A153.
  5. Rail brace ends: Formed steel, malleable or cast iron, for connection of rail and brace to posts.
  6. Ties - Fabric shall be attached using "Bandit" multi-lock cable ties as furnished by Hin and Coon of Boston, MA (Tel 617-268-1010), or an approved equal. Multi-lock cable ties shall match color of fence fabric.
- D. Concrete for footings shall conform to the requirements of Section 03300-Cast-in-Place Concrete. Compressive strength shall be 3,000 psi minimum.

## 2.02 Chain Link Swing Gates (New and Reset)

- A. Fabric, framework and accessories shall be as specified above for fencing.
- B. Hardware materials: Hot dipped galvanized steel or malleable iron shapes to suit gate size. Field coat moveable parts such as hinges and latch with PVC touch up paint, provided by manufacturer, to match adjacent finish.
  1. Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° inward.
  2. Latch: Forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.

## 2.03 Non-Shrink Grout & Sealants

- A. Non-shrink grout: Epoxy grout for installation of site improvements shall be a non-staining, non-shrink, hydraulic controlled expansion cement formulation for mixing with water at project site. Provide formulation for exterior applications that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Install and fasten materials and systems in proper relation with adjacent construction and with uniform appearance. Items shall be installed in a level, plumb condition, true to the lines and grades shown on the Contract Drawings.

Coordinate with work of other sections or trades.

### 3.02 FENCE INSTALLATION

- A. Reuse and install per specifications all salvaged fabric and other fence elements.
- B. Posts - Place posts in sleeves and backfill around each post with hydraulic cement or approved equal as called for on the drawings. Rod for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operation.
- C. Rails - All rails, top, bottom, middle (where required) shall form a continuous brace from end to end of each fence run. Couplings shall be located a maximum of 12" from line posts. All end and corner posts shall be braced to the nearest line post with center brace rails.
- D. Fabric - Leave approximately 2" between finish grade and bottom selvage. Pull fabric taut and tie to posts and rails.
- E. Stretcher Bars - Thread through fabric and secure to posts with tension bands spaced as shown on the Drawings.
- F. Tie Wires - Wire shall be spaced as shown on the drawings and securely fastened by twisting around pipe to which attached, clasping and fasten firmly. Bend twisted ends of wire to minimize hazard to persons or clothing.
- G. Fasteners - Install nuts for tension band and hardware bolts on side of fence opposite fabric side.

### 3.03 FENCE GROUNDING

- A. Chain link fence shall be electrically grounded as shown on the Drawings.

### 3.04 GATE INSTALLATION

- A. Reset salvaged 10' swing gate and provide new 10' swing gate in locations shown on the Drawings. Provide new hardware. Touch up all damage to coating with PVC touch up paint provided by manufacturer to match existing finish.
  - 1. Install gates plumb, level, and secure for full opening without interference.
  - 2. Attach hardware by means which will prevent unauthorized removal.
  - 3. Adjust hardware for smooth operation.
  - 4. Touch up hardware with PVC touch up paint provided by manufacturer to match adjacent finish.

### 3.05 GUARANTEE

- A. The Contractor shall cover the replacement of any damaged items or components, at no extra charge for the period of one year.

END OF SECTION



## SECTION 02870

## SHADE SHELTERS

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine and coordinate all Contract Drawings and other section of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to this Section.

## 1.02 SCOPE OF WORK

- A. The work shall include, but is not limited to, the following:
  - 1. Furnishing and installing metal and polyethylene fabric shade shelters in the locations shown on the drawings, in accordance with manufacturer's recommendations, and as specified herein.

## 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition.
- B. Section 02200 - Earthwork.
- C. Section 03300 - Cast-in-Place Concrete.

## 1.04 SUBMITTALS

- A. Submit the following in accordance with the requirements of section 01300 - Submittals.
  - 1. Manufacturer's drawings indicating type, size & gauge of materials, connection details, and layout plan for footings and posts, demonstrating compliance with the Specifications.
  - 2. Shop drawings for steel reinforcement of shade shelter footings.
  - 3. Manufacturer's installation instructions.

4. Manufacturer's standard color chart and samples.

1.05 QUALITY CONTROL

- A. Manufacturer qualifications: Manufacturer shall have a minimum of 5 years experience in the fabrication of tubular steel shade shelters. Manufacturer shall have fabricated similar shelters to that which is specified.
- B. Members shall be designed according to the American Institute of Steel Construction (AISC) specifications and the American Iron and Steel Institute (AISA) specifications for cold-formed members.
- C. Fabrication welds shall be in strict accordance with the structural welding code of the American Welding Society (AWS) specifications. All structural welds shall be in compliance with the requirements of "Pre-qualified" welded joints. All welding shall conform to ASTM A-233 series E-70XX electrodes - low hydrogen. Field welding is not allowed.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle metal fabrication items to prevent damage and deterioration.
- B. Store assembled items off the ground.

1.07 REFERENCE STANDARDS

- A. Materials and methods of construction shall comply with the following standards:
  - 1. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel; 2003a.
  - 2. ASTM A 325 - Standard Specification for Structural Steel Bolts, Heat Treated, 120,000 PSI Minimum Tensile Strength; 2004.
  - 3. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength; 2003a.
  - 4. ASTM A 563 - Standard Specification for Carbon and Alloy Steel Nuts; 2004.
  - 5. ASTM A 500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2003a.
  - 6. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-

Dip Process; 2003.

7. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process; 2003.
8. American Institute of Steel Construction (AISC).
9. American Iron and Steel Institute (AISI) Specifications for Cold Formed Members.
10. American Society of Testing Material (ASTM).
11. American Welding Society (AWS).
12. OSHA Steel Erection Standard 29 CFR 1926.750 Part R.
13. SSPC-SP 2 – Hand Tool Cleaning; Society for Protective Coatings; 2000.
14. SSPC-SP 10 - Near-White Blast Cleaning; Society for Protective Coatings; 2000.
15. ICC Evaluation Service, ESR-1006, Structural Insulated Panels.

#### 1.08 WARRANTY

- A. Shade Shelter shall have manufacturer's limited 20 year warranty on upright posts and support structure frames against failure due to rust-through corrosion.
- B. Shade shelter manufacturer shall provide a limited 10 year warranty on fabric and fabric stitching thread against degradation, cracking or material breakdown resulting from UV exposure, mold, or mildew, and on fastening devices and cables.

#### PART 2 - PRODUCTS

##### 2.01 SHADE SHELTERS

- A. Shade shelter shall be a steel powder-coated frame supported polyethylene fabric shelter as manufactured by Shade Systems represented locally by O'Brien and Sons of Medfield, MA (Tel:508-359-4200) or approved equal.
  1. Models shall be:
    - a. One (1) Rectangular Extended Hip Model No. R102010, dimensioned 20' x 10' with 10' entry height and

- b. Three (3) Rectangular Model R101510 10' x 15' each with 10' entry height, customized to provide one structure with 3 canvas tops and 8 posts.

- 2. Color of fabric and powder coated frame shall be chosen by the Landscape Architect/Owner from manufacturer's standard color choices.

B. Posts, Structural Frame Tubing and Hardware: All tubing used shall be cold-formed and milled per ASTM-A135 and ASTM A-500. Material testing shall be in accordance with ASTM E-8. Minimum yield shall be 40,000 psi with a minimum tensile strength of 45,000 psi on all posts. All tubing shall be pre-cut to appropriate lengths, and where applicable all outside surfaces shall be galvanized with an interior corrosion-resistant zinc-rich coating. Where required, support pipes shall be schedule 40 hot-dip galvanized or powder-coated black steel. All fastening hardware shall be stainless steel.

- 1. Tubing members shall be factory-welded by Certified Welders to American Welding Society (AWS) specifications and to the highest standards of quality workmanship. Weldments shall be finished with a zinc-rich galvanized coating.

- 2. Polyester Powder-Coating Process: Powder coated parts shall be completely cleaned and a hot zinc phosphate pretreatment with non-chromic sealer applied. Powder-coating shall be electrostatically applied and oven-cured at 375 to 425 degrees Fahrenheit. Polyester powders shall meet or exceed ASTM standards for Adhesion, Hardness, Impact, Flexibility, Overbake Resistance, and Salt Spray Resistance.

- a. Color for frame components shall be chosen by the Landscape Architect/Owner from manufacturer's standard color choices.

C. Fabric shall be "CoolNet" shade fabric supplied by Shade Systems Inc., or approved equal.

- 1. Fabric shall be knitted of monofilament and tape construction high density polyethylene with ultra violet stabilizers and flame retardant. UV block factor shall not be less than 91%.

- a. Fabric shall pass the requirements established under the NFPA 701 Test Method 2 test standards for flammability including the accelerated water leaching protocol.

- b. Fabric shall also meet the following criteria:

Nominal thickness	0.057 inches
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Fabric Mass	Min. 337 g/m <sup>2</sup>
Light Fastness	7-8 (Blue Wool Scale)
Weather Fastness	4-5 (Grey Scale Test)
Tear Resistance	Warp 210N;Weft 276N
Breaking Force	Warp 786N;Weft 1544N
Bursting Pressure	Mean 3125kPa
Bursting Force	Mean 1775N

- c. Color of fabric shall be chosen by the Landscape Architect/Owner from manufacturer’s standard color choices.
  
- D. Fabric fastening: Fabric shall be attached to frame using a vinyl covered minimum 1/4" diameter galvanized and clear vinyl coated cable. Cable fasteners are zinc-plated copper for maximum corrosion resistance.
  - 1. Fastening system shall be equivalent to the “Turn-N-Slide” fastening system provided by Shade Systems Inc., allowing fast removal of fabric, with sealed rafter and moving sleeve, independent per side, pre-looped and clamped at the factory.

PART 3 - EXECUTION

3.01 Assembly

- A. Carefully lay out footings according to manufacturer’s dimensions.
  
- B. Construct steel reinforced footings in accordance with Section 03300 - Cast-in-Place Concrete. Footings shall be 4,000 PSI concrete.
  
- C. The shelter shall be erected in a workman-like manner with framing and fabric installed according to the manufacturers’s installation instructions.
  - 1. Care shall be taken to avoid damaging the shelter during installation.
  
  - 2. Touch-up any damage to finish with manufacturer supplied touch-up paint.

END OF SECTION

## SECTION 02901

### PLANTING SOILS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

##### 1.02 SUMMARY

- A. The work of this Section consists of providing all equipment and materials and do all work necessary to supply and place planting soils as indicated on the Drawings and as specified.
  - 1. On-site topsoil in planting beds may be stockpiled and respread if it meets these specifications.
  - 2. Supply, spread and grade additional off-site loam as necessary to bring planting beds to new required grades.

##### 1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
  - 1. Section 02100 - Site Preparation: Stripping grass and loam from existing planting beds.
  - 2. Section 02200 - Earthwork: Compaction of loam.
  - 3. Section 02950 - Planting.

##### 1.04 REFERENCES

- A. Commonwealth of Massachusetts Highway Department (MHD):  
Standard Specifications for Highways and Bridges

##### 1.05 SUBMITTALS

- A. The Contractor shall submit to the Landscape Architect manufacturer's product

data and certified test results for materials as specified below. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Owner's Representative. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Owners Representative reserves the right to reject, on or after delivery, any material that does not meet these Specifications.

- B. Submit test results for on-site topsoil and off-site loam borrow. Testing will be at the Contractor's expense. Perform tests for organic content, and pH by UMASS Soil and Plant Tissue Laboratory, West Experiment Station, North Pleasant Street, University of Massachusetts, Amherst, MA 01003, (413) 545-2311 or by a private testing laboratory. Provide testing laboratory with plant list to obtain recommendations for soil additives for species being planted. Testing reports shall include the following:
1. Percent of organic matter.
  2. Chemical analysis for Nitrate Nitrogen, Ammonium, Nitrogen, Phosphorus, Potassium, Calcium, Manganese, extractable Aluminum, Lead, Zinc, Cadmium, Copper, Soluble Salts, and acidity (pH) and buffer (pH). A Conductivity Meter shall be used to measure Soluble Salts in 1:2 soil/water (v/v).
  3. Recommendations for soil additives to correct soils deficiencies as necessary to accomplish planting work for the species of trees, grasses and perennials specified.
- C. Fertilizer: Submit product manufacturer's data for tree planting fertilizer. Submit fertilization rates for fertilizer product based upon soil testing analysis.

## PART 2 - PRODUCTS

### 2.01 LOAM BORROW

- A. Loam borrow and on-site topsoil for re-use shall conform to the requirements of MHD Standard Specifications for Loam Borrow, M1.05.0.

### 2.02 SOIL ADDITIVES

- A. Acidulant for adjustment of loam borrow pH shall be commercial grade flours of sulfite, ferrous sulfate, or aluminum sulfate that are unadulterated. Acidulants shall be delivered in unopened containers with the name of the manufacturer, material, analysis and net weight appearing on each container.
- B. Ground limestone for adjustment of loam borrow pH shall contain not less than eighty five percent (85%) of total carbonates and shall be ground to such fineness that forty percent (40%) will pass through 100 mesh sieve and ninety five percent (95%) will pass through a 20 mesh sieve. Contractor shall be aware of loam

borrow pH and the amount of lime needed to adjust pH to specification in accordance with testing lab recommendations.

- C. Peat moss shall be composed of the partly decomposed stems and leaves of any of several species of sphagnum moss. It shall be free from wood, decomposed colloidal residue and other foreign matter. It shall have an acidity range of 3.3 pH to 5.5 pH as determined in accordance with the methods of testing of A.O.A.C., latest edition. Its water absorbing ability shall be a minimum of 1,100% by weight on an oven-dry basis.
- D. Gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) shall be agricultural grade, granular form.
- E. Commercial fertilizer shall be a product complying with the State and United States fertilizer laws. Deliver fertilizer to the site in the original unopened containers bearing the manufacturer's certificate of compliance covering analysis and which shall be furnished to the Owner's Representative. Fertilizer shall contain not less than the percentages of weight of ingredients as recommended by the soil analysis.

## PART 3 - EXECUTION

### 3.01 FILLING AND COMPACTION

- A. Confirm that the subgrade is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Subgrade elevations shall slope parallel to the finished grade and or toward the subsurface drain lines as shown on the Contract Documents. Fill any over excavation with approved fill and compact to the required subgrade compaction levels. Perform no work of placing and spreading loam until elevations have been accepted by the Owner's Representative.
- B. Protect adjacent walls, walks and utilities from damage or staining by the loam borrow.

### 3.02 FINE GRADING

- A. Immediately prior to dumping and spreading the loam borrow, the subgrade shall be cleaned of all stones greater than 2 inches and all debris or rubbish. Such material shall be removed from the site, not raked to the edges and buried.
- B. Loam borrow delivered to the site shall be protected from erosion at all times. Materials shall be spread immediately. Otherwise, materials that set on site for more than 24 hours shall be covered with tarpaulin or other soil erosion system acceptable to the Owner's Representative.
- C. No loam borrow shall be handled, planted, or seeded in any way if it is in a wet or



frozen condition. A moist loam borrow is desirable.

- D. Soil additives per testing recommendations shall be spread and thoroughly incorporated into the layer of loam borrow by harrowing, tilling, or other methods reviewed by the Owner's Representative.
- E. After loam borrow and required additives have been spread, carefully prepare the loam borrow by scarifying, harrowing, or tilling the loam to integrate soil additives into the top six (6) inches of the loam. Remove all large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter.
- F. The Contractor shall install loam borrow in successive horizontal lifts no thicker than 6 inches each lift prior to compaction, and shall compact each lift to the equivalent of 85% of maximum dry density. Final depth of compacted loam in planting beds shall be six (6").
- G. Compact each lift of loam sufficiently to reduce settling but not enough to prevent the movement of water and feeder roots through the soil. The loam borrow in each lift should feel firm to the foot in all areas and make only slight heel prints. At completion of the loam borrow installation, the soil should offer a firm, even resistance when a soil sampling tube is inserted from lift to lift.
- H. Select equipment and otherwise phase the installation of the loam borrow to ensure that wheeled equipment does not travel over subsoil, placed fills or ordinary borrow or already installed soil.

### 3.03 ACCEPTANCE

- A. Confirm that the final grade of loam borrow is at the proper finish grade elevations. Adjust grade as required to meet the contours and spot elevations noted on the Plans. Request the presence of the Owner's Representative to inspect final grade. Do not proceed with the remaining work of this Contract until the Owner's Representative has given his/her written approval of the final grade.

END OF SECTION

## SECTION 02950

### PLANTING

#### PART I - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

##### 1.02 REQUIREMENTS INCLUDED

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to perform all planting work and related items as indicated on the Drawings and as specified.
- B. The work shall include, but is not limited to, the following:
  - 1. Planting trees, including provision of backfill mix..
  - 2. Installing weed barrier fabric.
  - 3. Planting ornamental grasses and perennials.
  - 4. Mulching planting beds.
  - 5. Planting maintenance.
  - 6. One year guarantee period for all plants.

##### 1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in other Sections of the Specifications:
  - 1. Section 02100 - Site Preparation: Stripping grass and topsoil from planting beds.
  - 2. Section 02901 - Planting Soils: Placing and amending loam for planting beds.

##### 1.04 REFERENCES

- A. The following standards shall apply to the work of this Section.
  - 1. MHD Standard Specifications: Massachusetts Highway Department Standard Specifications for Highways and Bridges, 1988 Edition.

2. Hortus III, 1976, L. H. Bailey Hortorium.
3. American National Standards Institute (ANSI):  
Z60.1 American Standard for Nursery Stock,, latest edition, published by American Association of Nurserymen, (AAN).

#### 1.05 SUBMITTALS

- A. Submit proof of landscape contractor's experience to the Owner's Representative in accordance with Quality Assurance paragraph of this Section 02950 - Planting.
- B. Submit to the Owner's Representative representative samples, certifications, manufacturer's product data and certified test results for materials specified below. Materials shall not be ordered or delivered until the required submittals have been reviewed and approved by the Owner's Representative. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Owner's Representative reserves the right to reject, on or after delivery, any material which does not meet these Specifications.
- C. Material Sampling and Testing:
  1. Material Sampling and Testing of Loam Borrow from Off-Site Sources shall be as specified in Section 02901 - Planting Soils, of this Specification.
  2. Planting Mulch: Submit a one cubic foot sample.
  3. Antidesiccant: Submit manufacturer's product data.
  4. Peat: Submit manufacturer's product data.
  5. Mycorrhizal Fungal Inoculant:
    - a. Submit manufacturer's product data certifying that inoculant being supplied conforms to these Specifications.
  6. Soil Additives: Submit manufacturer's product data for all soil additives needed to amend a specific soil in order to meet the requirements of this Section 02950 - Planting.
  7. Weed Barrier: Submit manufacturer's literature demonstrating specification compliance, and installation instructions.

#### 1.06 EXAMINATION OF CONDITIONS

- A. All areas to be planted shall be inspected by the Contractor before starting work and any defects such as incorrect grading or inadequate drainage shall be reported to the Owner's Representative prior to beginning this work.
- B. The Contractor shall be solely responsible for judging the full extent of work requirements involved, including but not limited to the potential need for storing and maintaining plants temporarily and/or rehandling plants prior to final installation.
- C. Protection of plants is the full responsibility of the Contractor between the time

of digging at the nursery and final acceptance.

## 1.07 QUALITY ASSURANCE

- A. The Contractor shall locate plant material sources and ensure that plants are shipped in timely fashion for installation. No substitutions are allowed without the written permission of the Landscape Architect.
- B. Qualification of Landscape Contractor: The work of this Section 02950 - Planting, shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years experience.
- C. Qualification of Foreman or Crew Leader: All work of unloading, stockpiling, storing, transporting on-site - Planting, staking and guying, fertilizing, and maintenance of trees, shrubs, vines, groundcover, and perennials shall be supervised by a foreman or crew leader who is a certified landscape professional or a certified horticulturist.
  - 1. Landscape professional shall mean a Massachusetts Certified Landscape Professional certified by the Associated Landscape Contractors of Massachusetts.
  - 2. Horticulturist means a Massachusetts Certified Horticulturist as certified by the Massachusetts Nursery and Landscape Association.
  - 3. Certification shall be current. Proof of certification shall be submitted per Submittals paragraph of this Section 02950 - Planting.
- D. Qualification of Arborist: All work of pruning shall be performed by an arborist certified by the Massachusetts Arborist Association or the International Society of Arboriculture.

## PART 2 - PRODUCTS

### 2.01 LOAM BORROW

- A. Loam borrow for planting backfill shall be as specified in Section 02901 - Planting Soils, of this Specification.

### 2.02 SOIL ADDITIVES

- A. Soil additives shall be as specified in Section 02901 - Planting Soils, of this Specification.

### 2.03 PLANT MATERIAL INSPECTION

- A. At least one month prior to the expected planting date, the Contractor shall request that the Owner's Representative provide a representative to select and tag

stock to be planted under this Section 02950 - Planting.

- B. Plants to be inspected shall be in locations and conditions that allow direct and unobscured inspection by the Owner's Representative. Container grown or balled and burlapped shrubs shall be pulled from holding blocks by the nurseryman for scrutiny by the Owner's Representative at no additional cost to the Owner. Harvested trees held in storage shall not have branches tied up. Harvested trees shall not have trunks obscured by burlap, cardboard trunk protection, or other devices that would otherwise obscure inspection. In the event that branches are tied up, trunks are obscured by burlap or cardboard trunk protection, or root flares hidden by burlap and twine and the Owner's Representative cannot inspect root flares, trunks or branching habit, the Contractor shall bear all responsibility and costs associated with tree rejection at a later date during the course of the Contract.
- C. Inspection and approval of plants at the source shall not impair the right of subsequent inspection and rejection upon delivery to the site, or during the progress of the work if the Owner's Representative finds that plants do not meet the requirements of the Plant List or this Contract, have declined noticeably due to handling abuse, lack of maintenance, or other causes. Cost of replacements, as required, shall be borne by the Contractor.

#### 2.04 GRADES AND STANDARDS OF PLANTS

- A. The Contractor shall furnish all plants shown on the Contract Documents, as specified, and in quantities listed on the Plant List. No substitutions will be permitted, without written approval by the Owner's Representative. All plants shall be nursery grown unless specifically authorized to be collected as noted on the Plant List.
- B. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. Only plant stock grown within Hardiness Zones 1 through 6b, as established by the USDA Plant Hardiness Zone Map, latest edition, will be accepted.
- C. Plants shall be in accordance with ASNI Standards of the American Association of Nurserymen except as noted in this Section - Planting. Botanical plant names shall be in accordance with plant designations included in Hortus III.
- D. All deciduous trees shall meet the following standards:
  - 1. Trees shall have a single, straight trunk, well formed, and sturdy. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety.
  - 2. All pruning wounds shall show vigorous bark on all edges at the time of harvest. Pruning scars within the crown of any tree shall be clean cut and

shall leave no protrusion beyond the branch collar.

3. Trees shall be free from signs of pest and disease damage. The trunk shall be free from sun scald, frost cracks, and wounds resulting from abrasions, fire, animal damage, or other causes.
4. All trees shall have healthy, vigorous leaves or needles of normal size, color, shape, and texture for the particular species and variety.
5. Unless otherwise indicated on the Plant List, the height and spread of deciduous shade trees shall be the minimum requirements.
6. Take caliper measurements for deciduous trees 6 inches above ground level up to and including 4 inches caliper size and 12 inches above ground for larger sizes.
7. No deciduous tree shall be pruned after the Owner's Representative has tagged the plant in the nursery except as directed by the Owner's Representative.
8. Unless otherwise noted on the Plant List, the height to the first branch shall be not less than 6.5 from finish grade to comply with ADA requirements.

## 2.05 ROOT SYSTEMS

- A. Each plant shall have an extensive, symmetrically balanced fibrous root system. Any root ball which shows signs of asymmetry, girdling, injury, or damage to the root system shall be rejected. All parts of the fibrous root system of all plants shall be moist and fresh with a white color when washed of soil. When the plant is removed from the container, the visible root mass shall be healthy with white root tips. The root systems of all plants shall be free of disease, insect pests, eggs, or larvae.
- B. Minimum root ball diameters and depths shall be in accordance with ANSI standards.
- C. No plants shall be loose in the container.
- D. Curling or spiraling of the roots along the walls of rigid containers will not be accepted. Curling, spiraling or girdling roots within balled and burlapped material will not be accepted. Container grown plants which have roots growing out of the container will be rejected.

## 2.06 MYCORRHIZAL FUNGAL INOCULANT

- A. Mycorrhizal fungal inoculant shall be live spores packaged in plastic packets. At

minimum each packet of inoculant shall contain the following:

1. Live spores of VA Endomycorrhizal fungi: Vesicular-Arbuscular mycorrhizae fungi, minimum of 8 species.
  2. Live spores of Ectomycorrhizal fungi: including *Pisolithus tinctorius*.
- B. Mycorrhizal fungal inoculant shall be manufactured by Plant Health Care Incorporated, 440 William Pitt Way, Pittsburgh, PA 15238, telephone, (800) 421-9051; Horticultunral Alliance, 2946 Louise Street, Sarasota, FL 34237, (800) 628-6373; BioPlex Organics, 2213 Huber Drive, Manheim, PA 17545 (800) 441-3573, or approved equal.

#### 2.07 PLANTING BACKFILL MIX

- A. Planting soil mix shall be an approved loam borrow as specified in Section 02910 - Planting Soils, of this Specification and that has been pH adjusted according to particular planting applications and improved through the addition of organic matter as recommended by testing results for the particular species being planted.

#### 2.08 WEED BARRIER

- A. Weed barrier shall be a spun polypropylene fabric which allows water and air flow through, weighing a minimum of 3 oz per square yard. Weed barrier shall be UV stabilized with a limited warranty life-time of at least 20 years, similar to Dupont Green Vista Professional Landscape Fabric, Mirafi Mscape, or approved equal.
1. Flow rate through fabric shall not be less than 175 gal/min/square ft. as measured by ASTM D 4491.
- B. Anchor pins shall be U-shaped steel 6" x 1" x 6" minimum in profile.

#### 2.10 MULCH

- A. Mulch shall be aged pine-bark mulch meeting the Specifications of the MHD Standard specifications for Aged Pine Bark Mulch, M6.04.5.

#### 2.11 WATER

- A. The Contractor shall provide labor and water required to establish plants. During the maintenance period the Contractor shall water as required to insure that soil moisture is maintained to a depth of six inches or greater at all times.
1. Watering shall be done in a manner that will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surface by the watering equipment. The Contractor shall furnish sufficient watering equipment to maintain required water levels in the soil.

## PART 3- EXECUTION

### 3.01 PLANTING - GENERAL

- A. Furnishing and planting of plant material shall include, but is not limited to placing of weed barrier, digging of planting pits, furnishing the plants as specified as well as the labor of planting, fertilizing, and maintenance.
  - 1. Loam for planting beds is placed and amended under Section 02901 - Planting soils.
- B. Tree Planting
  - 1. Contractor shall locate all existing underground utilities that are within 10 feet of the proposed planting pits and notify the Owner's Representative of any conflicts prior to digging plant pits.
  - 2. It shall be the Contractor's option to place the weed barrier before or after tree planting.
- C. Seasons for Planting:
  - 1. Deciduous Plants - March 15 to May 15; October 10 to December 15
  - 2. Evergreen Plants - September 1 to November 15; March 15 to May 1
- D. Notify the Owner's Representative three working days prior to the proposed arrival of plant material on the site. Plants delivered to the site and not planted within 24 hours of delivery shall have their root balls covered with mulch and shall be watered on a daily basis such that root balls are kept moist throughout.

### 3.02 PLANTING OF TREES

- A. Locations for trees shall be staked on the ground by the Contractor for approval by the Owner's Representative before any plant pits are dug. Notify the Owner's Representative no less than 3 days prior to desired date of inspection of staking to schedule site visit.
  - 1. Circular plant pits shall not be required provided that the minimum dimension between the edge of the pit and the face of the rootball is not less than required by this Section 02950 - Planting.
  - 2. All plant pits dug with a machine shall have the sides of the holes scraped with hand shovels to prevent glazing on compaction of the sides of the hole. Remove and stockpile excavated loam for reuse as backfill for plant pit. All subsoil excavated from the bottoms of planting pits shall be removed from the site.



3. Plant pits shall be dug to the dimensions shown on the Contract Documents.
  4. Remove all soil from around the root flare of the stem of the plant and from the top of the rootball to determine the true depth of the rootball. Plants that have been planted such that root flares are buried will be rejected.
  5. Plant rootballs must be damp and thoroughly protected from sun and wind from the beginning of the digging operation, during transportation, and at the site until the final planting.
  6. Trees shall be placed in the center of plant pits, plumb, with the crown of their roots exposed and located above the surrounding finish grade.
  7. Prior to completion of planting installations, remove rope and cut wire baskets from the top 1/3 of the root balls. Pull burlap away from the trunk or stem of the plant and cut burlap from the top 1/3 of the root balls.
  8. Planting soil shall be backfilled with approved planting soil to the full depth of the planting pit. Eliminate air pockets and compact the soil by flooding the tree pit within 2 hours of planting installation. After water has drained from the planting pit and planting backfill has dried enough additional planting soil shall be spread in pit or bed to bring the finished surface of the planting pit or bed to grades shown on the Contract Documents. A saucer shall be formed around each plant at a depth of 3 inches for trees.
  9. All trees shall be inoculated with mycorrhizal fungi. Inoculant shall be added after the trees have been placed in their holes. Open the required number of packets for each plant and thoroughly mix the inoculant powder into the upper 10 inches (250 mm) of backfill soil.
    - a. The application rates for mycorrhizal fungal packets shall be in accordance with the manufacturers recommendations.
- B. Contractor shall keep trees plumb and upright at all times.
- C. Pruning:
1. As directed by the Owner's Representative, each plant shall be pruned in accordance with the workmanship requirements of "Pruning Standards" for Class I, fine pruning, to preserve the natural character of the plant.
  2. Tree pruning, as required, shall be undertaken to the full height of affected trees.

3. All dead wood or suckers and all broken or badly bruised branches shall be removed. Never cut a leader.
- D. In the event that rock or underground construction work or obstructions are encountered in any plant pit or bed excavation work, alternate locations will be selected by the Owner's Representative. Relocation of plant pits or beds shall be provided at no additional cost to the Owner. Provide the Owner's Representative with no less than 48 hours notice of obstruction so that a site visit can be scheduled to establish new locations for plants.
- E. Absolutely no debris may be left on the site. Repair any damage to site as directed by the Owner's Representative, at no additional cost.

### 3.03 INSTALLATION OF WEED BARRIER

- A. Weed Barrier shall be installed as shown on the Drawings, as specified below and according to manufacturer's instructions. Where these directives differ, the most stringent requirements shall be followed, unless otherwise directed by the Landscape Architect.
- B. Thoroughly remove and/or kill any existing weeds in planting bed.
- C. Excavate a trench around the perimeter of the planting bed, to bury edges of weed barrier 3" to 6". Bury edges at sidewalk and at edge of new bituminous pavement. Slit fabric at fence posts so that fabric can be brought to abut edge of new bituminous paving. Anchor edges of fabric with anchor pins and at all cuts, as indicated on the Drawings.
- D. Roll out the fabric and secure with anchor pins, as shown on the Drawings. Overlap fabric a minimum of 3" and secure along overlap as shown on the at 3'-5' o.c. with anchor pins.
- E. Slit fabric around chain link fence posts, trees and new plantings. Anchor each flap of cut with an anchor pins.
- F. Perform any other operations as recommended by the manufacturer.

### 3.04 INSTALLATION OF PERENNIALS & GRASSES

- A. On installed weed barrier, mark location of perennials and grasses, evenly spaced to the row and on center spacing shown on the planting details.
- B. Cut an "X" in the fabric for each plant large enough to allow planting of the containerized root ball.
- C. Dig a hole within the X to the depth of the container.

- D. Firm earth around the top and sides of the rootball.
- E. Fold back edges and anchor with pins as noted on the Drawings.

### 3.05 MULCH

- A. Cover fabric with 3" of mulch continuous.

### 3.06 WATERING

- A. Plants shall be watered immediately following planting as necessary to thoroughly moisten rootball and plant pit loam and thereafter shall be inspected frequently for watering needs and watered, as required, to provide adequate moisture in the planting pit. The Contractor shall inspect tree pits 24 hours after initial watering to confirm that they are draining properly. If surface water or excessively saturated plant pit soils exist the Contractor shall immediately notify the Owner's Representative. The Owner's Representative will recommend remedial measures based upon site conditions.

### 3.07 MAINTENANCE

- A. Maintenance shall begin immediately after each plant is planted and shall continue for a minimum 30-day period, and afterwards as necessary to ensure establishment through the one-year guarantee period.
- B. Maintenance shall consist of keeping the plants in a healthy growing condition and shall include but is not limited to watering, weeding, cultivating, pruning, re-mulching, tightening and repairing of guys, straightening of trees to a plumb position, removal of dead material, resetting plants to proper grades or upright position, and maintaining the planting saucer.
  - 1. Plants shall be inspected for watering needs at least twice each week and watered to promote plant growth and vitality.
  - 2. For trees in lawn or mulched beds, apply water to the ground surface directly under the canopy. Water shall be applied at a sufficiently slow rate to prevent run off from the soil surface but great enough to equal 0.2 inches of water per square foot of canopy area per hour for 5 hours per week.
  - 3. Planting beds and individual plant pits shall be kept free of weeds, and mulch shall be replaced as required to maintain the specified layer of mulch. Beds and individual pits shall be neat in appearance and maintained to the designed layout.
  - 4. Plants that die during the maintenance period shall be removed and replaced by the Contractor during that growing season, unless directed

otherwise by the Owner's Representative.

5. Spraying of insecticides or herbicides shall be done by State-licensed professionals. Spraying for insects, pests and diseases shall conform to the National Arborist Association Standards under the section entitled "Standards for Pesticide Application Operations", as currently adopted and as approved by the Landscape Architect. All insecticides, pesticides, and herbicides shall be EPA-approved and shall conform to the requirements MCRG: Massachusetts Control Recommendation Guide for Insect, Disease, and Weed Pests of Shade Trees and Woody Ornamentals, latest edition, University of Massachusetts, Amherst, College of Food and Natural Resources.
- C. During the maintenance period, any decline in the condition of plantings shall require the Contractor to take immediate action to identify potential problems and undertake corrective measures.

### 3.08 ACCEPTANCE

- A. Upon completion of all planting work, the Contractor shall request in writing that the Owner's Representative inspect the planting work.
- B. Acceptance Standards: If plant material is reviewed when it is in full leaf, leaves shall be plump with water with a shape indicative of the species and shall be free of insect, pest and disease damage. Twigs shall have living cambium for their full length. Twigs and branches shall have a full bud set for their full length, including terminal buds. Trunks and branches shall be free of frost cracks; sun scald; damage due to insects, pests, and disease; structural defects; and damage resulting from machinery or tools. Plant material inspected and reviewed when the plants are not in full leaf shall have twigs, branches and trunks meeting the above requirements. All plants regardless of the season of review shall have a minimum of 75 percent healthy, balanced branching structure with a healthy terminal leader(s) with viable terminal bud(s).
- C. If any number of plants do not meet these Acceptance Standards at the time of inspection, or if in the Owner's Representative's opinion, workmanship is unacceptable, written notice will be given by the Owner's Representative to the Contractor in the form of a punch list which itemizes necessary planting replacements and/or other deficiencies to be remedied. All plants that do not meet these Acceptance Standards shall be removed from the project within seven days of receipt of the punch list. Replacements shall conform in all respects to the Specifications for new plants and shall be planted in the same manner.

### 3.09 GUARANTEE

- A. Trees, ornamental grasses and perennials shall be guaranteed for one year from the date of Substantial Completion of the entire project.

- B. At the end of the guarantee period, a final inspection will be held to determine whether any replacements are required. Each plant shall be planted, shall have a character that is natural for its species as determined by the Owners Representative, and shall conform to the Acceptance Standards described in this Section 02950 - Planting. Plants found to be unacceptable shall be removed promptly from the site and replaced according to this Section 02950 - Planting. Replacements plants shall be guaranteed for an additional year.
- C. All replacements shall be plants of the same kind and size specified in the Plant List. The cost shall be borne by the Contractor, except for replacements due to vandalism.

END OF SECTION

## SECTION 03300

## CAST-IN-PLACE CONCRETE

## PART 1- GENERAL

## 1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.

## 1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, as indicated on the Drawings and as specified.
- B. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes. The work shall include, but is not limited to, the following:
  - 1. Footings.
  - 2. Slabs.

## 1.03 RELATED WORK

- A. Section 02200 - Earthwork.
- B. Section 02667 - Water Service Systems.
- C. Section 02670 - Backflow Preventer Cabinet.
- D. Section 02770 - Granite Curb.
- E. Section 02800 - Site Improvements.
- F. Section 16100 - Electrical Service Systems.

## 1.04 SUBMITTALS

- A. Concrete mix designs including the following information:
  - 1. Proportions of cement, fine and coarse aggregate, and water.
  - 2. Water cement ratio, design strength, slump and air content.
  - 3. Type of cement and aggregates.
  - 4. Type and dosage of all admixtures.
  - 5. Range of ambient temperature and humidity for which the design is valid..
- B. Certification by ready-mix plant of psi of concrete mix design.

- C. Submit the product data or suppliers certificates and samples for the following:
1. Cementitious materials and aggregates.
  2. Form materials and form-release agents.
  3. Steel reinforcement and reinforcement accessories.
  4. Admixtures.
  5. Curing materials.
  6. Joint-filler strips.
  7. Repair materials.
- D. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement.

#### 1.05 REFERENCE STANDARDS

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein.
1. American Concrete Institute (ACI)
    - (a) ACI 117 Specifications for Tolerances for Concrete Construction and Materials
    - (b) ACI 212 Guide for the Use of Admixtures in Concrete
    - (c) ACI 301 Specification for Structural Concrete
    - (d) ACI 305 Hot Weather Concreting
    - (e) ACI 306 Cold Weather Concreting
    - (f) ACI 347 Recommended Practice for Concrete Formwork
  2. American Society for Testing and Materials (ASTM)
    - (a) A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
    - (b) C33 Concrete Aggregates
    - (c) C94 Ready Mixed Concrete
    - (d) C143 Slump of Portland Cement Concrete
    - (e) C150 Portland Cement
    - (f) C171 Sheet Materials for Curing Concrete
    - (g) C260 Air-Entraining Admixtures for Concrete
    - (h) C309 Liquid Membrane Forming Compounds for Curing Concrete
    - (i) C494 Chemical Admixtures for Concrete
    - (j) C920 Elastomeric Joint Sealants

- (k) D1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.5 kg) Rammer and 18-9n. (457-mm) Drop

- 3. Standard Specifications: Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and Bridges, latest edition, Construction and Materials Specifications for Concrete.

#### 1.06 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Maintain field records of time, date of placing, curing, and removal of forms for concrete in each portion of the work.

#### 1.07 PROJECT CONDITIONS

- A. Establish and maintain required lines, surfaces, and elevations.
- B. Do not install concrete work over wet, saturated, muddy, or frozen subgrade.
- C. Do not install concrete when air temperature is below 40 degrees F.
- D. Calcium chloride, salt, or any other admixture to prevent concrete from freezing is prohibited.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

#### 1.09 TESTING

- A. The Owner will select, engage, and pay for the services of an independent testing laboratory to perform structural tests on concrete as the Landscape Architect may deem appropriate.
- B. The Contractor shall make available to the Owner's testing laboratory any samples or specimens which the laboratory may require to perform quality control testing on concrete the Owner may elect to provide additional testing for.
- C. Retesting of materials which fail the original test shall be paid for by the Contractor.



## PART 2 - PRODUCTS:

### 2.01 BASE COURSES

- A. Base material under footings and walls shall be as specified under Section 02200, Earthwork.

### 2.02 CONCRETE MIX

- A. Provide ASTM C94 ready-mixed concrete. Batch mixing at site is not acceptable. Use ACI 301 Method 1 or Method 2 to determine mix proportions.
- B. Concrete mix shall conform to the following City of Waltham standards:
  - 1. 7% ( $\pm$  1-1/2%) air-entrained cement concrete
  - 2. 4,000 psi at 28 days
  - 3. 3/4" maximum stone
  - 4. Depth of concrete for sidewalks shall be 4" (reinforced) and 6" (reinforced) at vehicular entrances.
  - 5. Reinforcement for sidewalks and vehicular entrances shall be a fibrous concrete reinforcement of 100% virgin polypropylene fibrillated fibers of multi-design gradation as manufactured by Fibermesh, Synthetic Industries, 4019 Industry Drive, Chattanooga, Tennessee 37416 or an approved equal.
- C. Concrete shall conform to ASTM C94. One copy of the certificate of delivery shall be submitted immediately upon arrival of each load of concrete at the site.
- D. Indicate water added to mix at job site on each delivery ticket. Show quantity of water added. Site water tempered mixes exceeding specified slump range will be rejected as not complying with specification requirements.
- E. Concrete slump shall be no less than 2" nor greater than 4" determined in accordance with ASTM C143.
- F. Concrete shall contain a water reducing agent to minimize the water cement ratio of the mix, at the specified slump.
- G. No calcium chloride or admixtures containing calcium chloride shall be added to the concrete. No admixtures other than those specified shall be used in the concrete without the specific written permission of the Landscape Architect.
- H. No concrete shall be placed by pumping methods.

### 2.03 CEMENT

- A. Cement shall be Portland Cement conforming to ASTM C150, Type II, Dark Color.

#### 2.04 ADMIXTURES

- A. Except as otherwise specified, use of concrete admixtures shall conform to ACI 212.
- B. Air entraining agent shall conform to ASTM C260.
- C. Water reducing agent shall conform to ASTM C494, Type A.
- D. Water reducing agent-retarder shall conform to ASTM C494, Type D.

#### 2.05 AGGREGATE

- A. Except as otherwise noted, aggregate shall conform to ASTM C33.
  - 1. Maximum size of aggregate shall be 3/4".

#### 2.06 WATER

- A. Water shall conform to ASTM C94.

#### 2.07 CONCRETE REINFORCEMENT

- A. Steel reinforcing bars shall conform to ASTM A615, Grade 60

#### 2.08 FORMWORK

- A. All concrete work shall be formed, including footings.
- B. The form facing materials shall produce a smooth, hard, uniform texture on the concrete to match finish of existing wall to remain.
- C. Form material shall be plywood, tempered concrete-form grade hardboard, or metal, capable of producing the required finish.
- D. Forms shall be true to line and free of warp and shall be of sufficient strength when braced to resist the pressure of concrete during placement within the allowable tolerances.
- E. Surfaces of the forms to be in contact with concrete shall be coated with non-staining form release compound, free of kerosene, oil and wax. Wetting or coating with grease or oil will not be accepted as a substitute.
- F. Exposed concrete arises shall be chamfered. Chamfer shall be mitered at changes of direction.

- G. Formwork for footings shall be metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

## 2.09 FORM RELEASE AGENT

- A. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

## 2.10 FORM TIES

- A. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
- B. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of the exposed concrete surface or that, when removed, will leave holes not larger than 1 inch in diameter in concrete surface.

## 2.11 CURING MATERIALS

- A. Curing paper shall be a nonstaining, fiber reinforced laminated draft bituminous product conforming to ASTM C 171. Four mil polyethylene sheeting may be substituted for curing paper. Curing compound shall be a resin-based white pigmented clear curing compound conforming to ASTM C 309, Type 2, Class B.

## 2.12 EXPANSION JOINTS

- A. Expansion joints shall be ½" in wide and shall be filled with preformed joint filler.
- B. Expansion joint filler shall be conform to the requirements of Section 701 of the Standard Specifications for Highways and Bridges, Commonwealth of Massachusetts, Department of Public Works, 1988 as follows:
  - 1. Expansion joint filler shall be preformed, non-extruding and resilient, non-bituminous type conforming to AASHTO-M153, Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
  - 2. Joint filler shall be one piece for the full depth and width of the joint.
  - 3. Use of multiple pieces of lesser dimensions to make up the required depth and width of the joint will not be permitted.
- C. Seal with compatible joint sealant.

- D. Unless otherwise indicated on the Drawings, expansion joints shall be 30 ft. o.c., maximum.

## PART 3 - EXECUTION

### 3.01 GRADING

- A. Make any corrections necessary to base course material furnished and installed under SECTION 02200, Earthwork, to bring base material to the sections and elevations shown on the Contract Drawings.
- B. Existing subgrade material which will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to required line and grade and to replace unsuitable material shall be material conforming to Section 02200 Earthwork.

### 3.02 FORMWORK

- A. Formwork shall be constructed, braced and tied so that the formed surfaces of the concrete will be perfectly true, smooth and to the dimensions shown on the Drawings within the tolerances for formed surfaces as specified in ACI 301.
- B. Forms shall not be moved for seventy-two (72) hours after the Cement concrete has been placed, or for a longer period if directed by the Landscape Architect/Engineer. Extreme care shall be taken in removing forms in order that no damage will be done to the Cement concrete. Under no condition shall any bar, pick or other tool be used which depends upon leverage on the Cement concrete for removal of the forms.

### 3.03 REINFORCEMENT

- A. Reinforcing bars showing cracks after bending shall be discarded and replaced with new material conforming to this Section at no additional cost to the Owner.
- B. Reinforcing shall be thoroughly cleaned of loose mill and rust, scale, dirt, ice, and other foreign materials which may reduce the bond between concrete and reinforcing. Where there is a delay in placing concrete after reinforcement is in place, bars shall be reinspected and cleaned when necessary.
- C. After forms have been coated with form release agent, but before concrete is placed, reinforcing steel shall be securely wired in exact position call for, and shall be maintained in that position until concrete is placed and compacted.
- D. Except as otherwise noted, reinforcing steel shall be spliced by lapping bar ends, placing bars in contact, and tightly wiring. Minimum lap of spliced bars shall

conform to ACI 318.

- E. Unless otherwise indicated on the Drawings, reinforcing shall extend within 2 inches of formwork and expansion joints. Reinforcement shall continue through construction joints.

### 3.04 HOT WEATHER CONCRETING

- A. Procedures shall be in accordance with provisions of ACI 305. Concrete just placed shall be protected from the direct rays of the sun and the forms and reinforcement just prior to placing shall be sprinkled with cold water. Every effort shall be made to minimize delays which will result in excessive mixing of the concrete after arrival on the job.

### 3.05 COLD WEATHER CONCRETING

- A. Procedures shall be in accordance with provisions of ACI 306.

### 3.06 CONCRETE PLACEMENT

- A. Before placing concrete, forms and space to be occupied by concrete shall be thoroughly cleaned and reinforcing steel and embedded metal shall be free from dirt, oil, mill scale, loose rust, paint and other material which might tend to reduce bond.
- B. Existing concrete, earth and other water permeable material against which new concrete is to be placed shall be thoroughly damp when concrete is placed. There shall be no free water on the surface.
- C. Concrete which has set or partially set before placing shall not be employed. Retempering of concrete will not be permitted.
- D. Segregation of the concrete shall be prevented during handling; should any segregation occur, the concrete shall be re-mixed before it is placed. Concrete shall not be allowed to drop freely more than 4 feet. If the free drop to the point of placement must exceed 4 feet, the Contractor shall obtain the approval of the Engineer for the proposed method of depositing the concrete. The concrete shall not be required to flow over distances greater than 3 feet in any direction in the forms or on the ground, unless otherwise permitted by the Landscape Architect.
- E. Concrete shall be thoroughly spaded, and tamped, and vibrated to secure a solid homogenous mass, thoroughly worked around reinforcement and into corners of forms.

### 3.07 CURING AND PROTECTION

- A. It is essential that concrete be kept continuously damp from time of placement until end of specified curing period. It is equally essential that water not be added to surface during floating and troweling operations, and not earlier than 24 hours after concrete placement. Between finishing operations surface shall be protected from rapid drying by a covering of waterproofing paper. Surface shall be damp when the covering is placed over it, and shall be kept damp by means of a fog spray of water, applied as often as necessary to prevent during, but not sooner than 24 hours after placing concrete. None of the water so applied shall be troweled or floated into surface.
- B. Concrete surfaces shall be cured by completely covering with curing paper or by use of a curing compound.
  - 1. Concrete cured using curing paper shall be completely covered with paper with seams lapped at least 2 in. and sealed with tape. Concrete surface shall not be allowed to become moistened with 24 hours of placing concrete. During curing period surface shall be checked frequently, and sprayed with water or curing compound, as applicable, as often as necessary to prevent drying, but not earlier than 24 hours after placing concrete.
  - 2. Concrete cured with a curing compound shall have curing compound applied at a rate of 200 sq. ft. per gallon in two applications perpendicular to each other.
  - 3. Concrete surfaces to receive paint, waterproofing, damproofing, thin-set adhesives and coatings, and similar applied materials which require bond and adhesion to concrete surfaces shall be cured using curing paper. The use of curing compounds on these surfaces will not be permitted.
- C. Vertical surfaces of slabs shall be cured by maintaining wood forms continuously wet during curing period, or by wrapping with continuous .006" polyethylene with taped joints.
- D. Footings and slabs where exposed shall be provided with continuous moist curing for at least seven (7) days regardless of ambient air temperatures.

### 3.08 FINISHING OF EXPOSED SURFACES

- A. It is the intention that all concrete be sound and dense. Concrete exhibiting defects on surfaces exposed to public view shall be removed and replaced or repaired in accordance with method that achieves a surface which is acceptable to the Landscape Architect. All such removal or repairs shall be at the Contractor's expense.

- B. Formed concrete surfaces which will be visible after completion of the structure shall have a "smooth form" finish, as defined by ACI 301.
  - 1. At formed surfaces exposed to view, chip off fins and other projections and trowel patch all voids, honeycombs and air pockets exceeding ½" in any dimension.
- C. Sidewalk pavement and vehicular drive aprons shall have a broom finish.

### 3.09 EXPANSION JOINTS

- A. Expansion joint shall be ½ in. wide, clean, dry, and free of loose material, dirt, oil and grease, and shall be formed in the concrete to required width with preformed joint filler in place. Joint filler shall extend the full length of the expansion joint.
  - 1. Depth of filler shall extend to the full thickness of the concrete in vertical surfaces and in concealed horizontal surfaces.
  - 2. Depth of filler in exposed horizontal surfaces shall be as required to form a ½ in. deep sealant recess below finished grade.

### 3.10 PROTECTION OF CONCRETE SURFACES

- A. Concrete surfaces shall be protected from traffic or damage. If necessary ½ in. thick plywood sheets shall be used to protect the exposed surface.

### 3.11 CLEAN-UP

- A. At the completion of the work of this section, all rubbish, debris, waste materials from, and about the site, including tools, scaffolds, apparatus and appliances used in connection with work under this Section shall be legally disposed of and the premises shall be left in a clean condition.

END OF SECTION

## SECTION 03750

## CONCRETE WALL CLEANING - ALTERNATE #2

## PART 1 - GENERAL

## 1.01 SUMMARY OF WORK

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.
- B. The entire work of this Section constitutes Alternate #2
- C. Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Remove general soil and as much staining as possible from the surface of the existing retaining wall by the use of water and detergent washing with soft brushes.

## 1.02 QUALITY ASSURANCE

- A. Provide sample cleaned area using two (2) specified cleaners. Each test area shall be a minimum 4 ft. by 4 ft. Use manufacturer's application instructions. Let the test panel dry 3 to 7 days before inspection. Keep test panels available for comparison throughout the cleaning project.
- B. It is the intention of this Section to provide for removal of soil and stains from the concrete surfaces indicated to provide uniformly clean surfaces without blotches, streaks, runs, overly cleaned areas, or any other kind of spotty or uneven appearance and without damaging or deteriorating underlying materials.

## 1.03 SUBMITTALS

- A. Submit product data, manufacturer's product sheet, Material Safety Data Sheets for each cleaning product.
- B. For each type of cleaning, submit description of materials, methods, tools and equipment to be used.
- C. Submit work plan indicating method of containment, collection and disposal of waste water.

## 1.04 PROJECT REQUIREMENTS



- A. Laws & Regulations: Conduct all masonry cleaning work and dispose of all residue from such work in complete compliance with all applicable federal, state, and local laws and regulations.
- B. All wastewater from cleaning operations, regardless of content, shall be contained, collected and legally disposed of off-site.

#### 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Use of Water: Do not perform masonry cleaning work that will wet concrete or cause it to be wet when ambient temperature is below 40 degrees Fahrenheit, nor when temperature of air or concrete is expected to drop below 40 degrees Fahrenheit within 72 hours. Cleaning shall not be done if there is any likelihood of frost or freezing prior to complete drying of the wall. No water cleaning is permitted for two weeks prior to the first average frost date, or even earlier if local forecasts predict cold weather.
- B. Conform to any additional substrate and ambient air temperature requirements of manufacturer.

### PART 2 - PRODUCTS

#### 2.01 WATER

- A. Water for cleaning shall be clean, potable, free of oils, acids, alkalis, salts, organic matter, soluble and insoluble iron, and other substances detrimental to surfaces being cleaned and non-staining.

#### 2.02 EQUIPMENT

- A. General: Provide all equipment and accessories to distribute water pressures and flow rates required for masonry cleaning.
- B. Brushes: Fiber brushes only; no metal bristle brushes are permitted.

#### 2.03 CLEANING AGENTS

- A. Cleaner shall be a non-ionic non-hazardous and non-regulated substances. Tests shall be made with the following cleaners. One will be selected to wash the entire surface of the wall.
  1. Enviro Klean 2010 All Surface Cleaner by Prosoco, or approved equal.
  2. Biowash by Prosoco, or approved equal.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Set-up containment and collection system.
- B. Water washing shall be accomplished using low pressure (100 psi or below) water.

### 3.02 GENERAL CLEANING WITH DETERGENT

- A. Mix and apply cleaning agent per manufacturer's instructions.
  - 1. Pre-wet the surface with clean water.
  - 2. Apply prepared diluted cleaning solution with a soft bristled brush.
  - 3. Leave diluted cleaning solution on the surface for up to 30 minutes. If drying occurs, mist the surface lightly with clean water.
  - 4. Gently scrub the surface until soiling is removed
  - 5. Rinse with clean water.
- B. Collect wastewater and legally dispose of off-site.

END OF SECTION

## SECTION 09614

## DETECTABLE WARNING PANELS

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.

## 1.02 SCOPE OF WORK

- A. Provide all equipment and materials, and do all work necessary to furnish and install Cast In Place Detectable Warning Panels as indicated on the Drawings and as specified.

## 1.03 RELATED WORK

- A. Section 02700 - Granite Curbing.
- B. Section 03300 - Cast-in-Place Concrete.

## 1.04 REFERENCE STANDARDS AND SPECIFICATIONS

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
- B. Detectable warning surface panels shall comply with detectable warnings on walking surfaces section of the American with Disabilities Act (Title III Regulations, 28 CFR Part 36 ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES).
- C. American Society for Testing and Materials (ASTM):
  - 1. ASTM C-543 Chemical Resistance
  - 2. ASTM D-1501 Simulated Sunlight
  - 3. ASTM D-756 Procedure "E" Accelerated Service Test
  - 4. ASTM D-570 Water Absorption
- D. Mass. Standard Specs. - Latest edition of the Standard Specifications for Highways, Bridges and Waterways, 1988 Edition, the Commonwealth of Massachusetts, Department of Public Works, hereinafter referred to as "the Massachusetts Standard Specifications."

- E. AASHTO HB-17 single wheel HS2-44 loading “Standard Specifications for Highways and Bridges”.

#### 1.05 SUBMITTALS

- A. Product Data: Submit manufacture’s literature describing products, installation procedures and maintenance.
- B. Samples: Submit two (2) tile samples minimum 6"x6" of the kind proposed to be used.

#### 1.06 QUALITY ASSURANCE

- A. Provide Cast-in-Place Detectable Warning Panels and accessories as produced by a single manufacturer with a minimum of three (3) years experience in the manufacturing of Cast-in-Place Detectable Warning Panels.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Cast-in-Place Detectable Warning Panels shall be suitably packaged or crated to prevent damage in shipment or handling..

#### 1.08 PROJECT CONDITIONS

- A. Cold Weather Protection: Maintain minimum temperature of 40°F in areas to receive Cast-in-Place Detectable Warning Panels for at least 24 hours prior to installation, during installation, and for not less than 24 hours after installation.

#### 1.09 GUARANTEE

- A. Cast-in-Place Detectable Warning Panels shall be guaranteed in writing for a period of five (5) years from date of final completion. The guarantee includes defective work, breakage, deformation, fading, and loosening of panels.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURER

- A. The Polymer concrete Cast-in-Place Detectable Warning Panel specified is based on Armorcast Products Company (818-982-3600) or approved equal.
- B. Color: Brick Red conforming to Federal Color No. 22144. Color shall be homogeneous throughout the panel.

## 2.02 DETECTABLE WARNING PANELS

- A. Polymer concrete cast-in-place Detectable Warning Panels shall be manufactured using polymer concrete material. Polymer material shall consist of calcareous and siliceous stone, glass fibers, and thermo set polyester resin.
- B. Detectable Warning Panels shall be manufactured using matched die molds under heat and pressure for superior material compaction, controlling curing and uniform dimension. Panels shall conform to the following dimensions: 24" width x 60" depth x ½" thickness.
- C. Polymer concrete Detectable Warning Panels shall be reinforced with fiberglass mats.
- D. Polymer concrete Detectable Warning Panels shall have ½" minimum material thickness excluding truncated dome height or reinforcement ribs.
- E. Polymer concrete Detectable Warning Panels shall be fitted with Zinc alloy concrete anchors and stainless steel bolts.
- F. Polymer concrete Detectable Warning Panels shall be coated to keep the panel surface clean during installation. The coating shall be removed after installation.
- G. Polymer concrete Detectable Warning Panels shall be fitted with hot dipped galvanized angles for installation in wet concrete.
- H. Polymer concrete Detectable Warning Panels shall be field replaceable without cutting existing concrete or pouring new concrete.
- I. Slip resistance of Polymer concrete Detectable Warning Panels when tested in accordance with ASTM C-1028 shall not be less than 0.80.
- J. Chemical resistance of Polymer concrete Detectable Warning Panels when tested in accordance with ASTM C-543 to withstand without any degradation or discoloration: 1% Hydrochloric Acid, Acetic Acid, Sulfuric Acid, Sodium Chloride, Sodium Hydroxide, Sodium Sulfate, Sodium Carbonate, Kerosene and Oil.
- K. Polymer concrete Detectable Warning Panels when tested in accordance with ASTM D-635 shall not sustain burning and be self extinguishing.
- L. Polymer concrete Detectable Warning Panels when tested in accordance with ASTM G-21 shall not promote fungus growth.
- M. Polymer concrete Detectable Warning Panel material surface flammability when tested in accordance with ASTM E-162 shall be less than 25.

- N. Polymer concrete Detectable Warning Panel smoke density when tested in accordance with ASTM E-662-03 shall be less than 0.5 at 1.5 minutes and less than 15 at 4 minutes.

2.03 MECHANICAL PROPERTIES

- A. The polymer concrete material shall meet the following for mechanical properties:

<b>Test Method</b>	<b>Mechanical Properties</b>	<b>Average Value</b>
ASTM C-170-99	Compressive Strength	11,430 PSI
ASTM C-580-02	Flexural Strength	3,330 PSI
ASTM C-307-99	Tensile Strength	1,710 PSI
ASTM C-372-02	Shear Strength	11,670 PSI
ASTM C-580	Modulus of Elasticity	1,776,400 PSI

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Concrete shall be placed and finished true to line and grade and smooth to the required dimensions and gradient as indicated in the Drawings and as specified in Section 03300, Cast-in-Place Concrete.
- B. Immediately after finishing concrete, an electronic level shall be used to verify that gradient and slope of finished concrete does not exceed maximum slope and gradient as indicated in the Drawings. No concrete shall be removed in the area to accept the panel.
- C. Detectable Warning Panels shall be tamped (or vibrated) into the fresh concrete to ensure that the level of the panel is flush to the adjacent concrete surface. The embedment process shall not be accomplished by stepping on the panel as this may cause uneven setting which can result in air voids under the panel surface. The base of the truncated domes shall be set flush to the adjacent surface to permit proper drainage and eliminate tripping hazards between adjacent finishes.
- D. Immediately after panel placement, the panel elevation shall be checked to be flush with adjacent concrete. The elevation and slope shall be set as indicated in the Drawings. Ensure that the surface of the panel is flush with the surrounding concrete. Finish concrete around the panel’s perimeter with a steel trowel.
- E. Following the concrete curing stage, protective plastic wrap is to be removed

from the panel surface by cutting the plastic wrap with a sharp knife tight to the concrete / panel interface.

### 3.02 CLEANING, PROTECTION AND MAINTENANCE

- A. Protect panels against damage during construction period in compliance with manufacturer's specifications.
- B. Protect panels against damage from rolling loads following installation by covering with plywood or hardwood.
- C. Clean panels not more than four days prior to date scheduled for inspection intended to establish date of substantial completion.
- D. Comply with manufacturer's maintenance instructions for cleaning and maintaining panel surface.

END OF SECTION

## SECTION 10430

## EXTERIOR SIGNS &amp; PLAQUES

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.

## 1.02 REQUIREMENTS INCLUDED

- A. Provide all equipment and materials, and do all work necessary to complete the installation of exterior signs as indicated on the Drawings and as specified.
- B. The work of this Section includes, but is not limited to:
  - 1. Furnishing and installing one (1) exterior park identification sign with granite posts. Sign and sign posts shall both be furnished and installed by the sign vendor.
  - 2. Exact wording of sign and plaque are subject to change, including name of park.
  - 3. Furnishing and installing one (1) bronze plaque with text.
- C. For construction signs refer to Section 01500 - Temporary Facilities.

## 1.03 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
  - 1. Section 01500 - Temporary Facilities.
  - 2. Section 02200 - Earthwork.
  - 3. Section 03300 - Cast-in-Place Concrete.

## 1.04 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.



- B. American Society for Testing and Materials (ASTM):
1. B 209 Aluminum and Aluminum Alloy Sheet and Plate.
  2. B 221 Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
  3. B 308 Aluminum-Alloy 6061 T6 Standard Structural Shapes Rolled or Extruded.
  4. B 429 Aluminum-Alloy Extruded Structural Pipe and Tubing.

#### 1.05 SUBMITTALS

- A. Shop Drawings: Submit complete shop drawings of work of this Section. Show all details of construction and installation of each sign and type.
- B. Product Data: Submit manufacturer's product data of work of this Section. Provide complete product description and specifications, catalog cuts, and other descriptive data.
- C. Field Measurements: Take all necessary field measurements before preparation of shop drawings and fabrication. Do not delay progress of the job. If field measurements are not possible prior to fabrication, allow for field cutting and fitting.
- D. Verification Samples: Submit representative samples of the following materials for approval prior to construction. Show full color ranges and finish variations expected. Provide samples having minimum size of 144 sq. in.
1. Paint color and finish sample on 1/8 in. thick aluminum. for each color and finish required.
  2. Paint color and finish sample on 1/8 in. thick structural steel, for each color and finish required.
  3. Vinyl samples, in specified type style, size and graphic, for each color and finish designated on Drawings.
  4. Full size representative plotted templates for designated lettering, for each style, size, color, and finish designated on the Drawings. Include character and word spacing.

#### 1.06 QUALITY ASSURANCE

- A. Source: For each material type required for the work of this Section, provide primary materials which are the product of one manufacturer. Provide secondary or accessory materials which are acceptable to the manufacturers of primary materials.

- B. Installer: A firm with a minimum of three years experience in type of work required by this Section and which is acceptable to manufacturers of primary materials.
  - 1. If installer is different company than sign manufacturer, notify Architect in advance providing installer's name, address, telephone number, and name of contact person.
- C. All work and material shall be in accordance with all applicable codes and standards and shall be acceptable to all authorities having jurisdiction. Work shall meet or exceed the requirements of the Massachusetts State Building Code.
- D. Design Criteria: The Drawings indicate size, profiles, and dimensional requirements of signs and graphics. Other manufacturing methods may be considered provided the deviations in dimensions and profiles are minor and do not, in the opinion of the Architect, change the design concept.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials and products unopened. Store and handle in strict compliance with manufacturers instructions and recommendations. Store under cover and protect from weather damage.
- B. Sequence deliveries to avoid delays, but minimize on-site storage.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products of one of the following manufacturers that meet or exceed requirements specified:
  - 1. Express Sign & Graphics, 301 Littleton Road, Chelmsford, MA 01824, p 978-250-9890, f 978-250-0975, or approved equal.
  - 2. 3M (Vinyls) or approved equal.
  - 3. Matthews (Acrylic polyurethane paint) or approved equal.

#### 2.02 ALUMINUM MATERIALS

- A. General: Provide manufacturer's standard extrusions, sections, sheet, and plate, of alloy and temper recommended by aluminum manufacturer or finisher for type, use, and finish indicated, but not less than strength and durability properties specified below:

1. Structural Aluminum Shapes: ASTM B 308, 6061 alloy.
2. Extruded Aluminum Bars, Rods, Shapes, and Tubes: ASTM B 221, 6063 alloy.
3. Aluminum Sheet and Plate: ASTTv1 B 209, alloy 1100, 3003, or 5052.

B. VINYL MATERIALS

1. Applied Vinyl Graphics: Provide opaque nonreflective vinyl film, 0.0035-inch minimum thickness, with pressure-sensitive adhesive backing, suitable for exterior applications. Color shall be as indicted.

2.03 GRANITE POSTS

- A. Granite shall be furnished by the sign vendor.
- B. Granite shall be “Woodbury Grey” as supplied by Swenson Granite Works, 10 Main Street Route 109, Medway, Massachusetts 02053, (508)-533-2882 (Fax 508-533-344), or “Chelmsford Gray” as supplied by Fletcher Granite Company, 534 Groton Road, Westford, MA 01886, (978)-251-4031 (Fax 978-251-8773), or approved equal. Granite shall be supplied by a source approved by the Architect.
- C. Granite shall conform to the requirements of ASTM C 515, Architectural Grade and NBGA Specifications except as modified herein.
- D. Granite shall be standard grade, free of cracks, seams, starts, or other defects which may impair its strength, durability, or appearance. Exposed surfaces shall be free from spots, spalls, chips, stains, discoloration, or other defects which would affect its appearance. Color, texture, and finish shall be within the range of samples approved by the Architect.

2.04 BRONZE PLAQUE

- A. Provide bronze casting, copper alloy UNS C83600, complying with the requirements of ASTM B584.
  1. Casting shall be free from pits, scale, sand holes, or other defects. Comply with the requirements specified for metal, border style, background, texture, and finish and with requirements shown for finish, size, shape, and copy.
  2. Border style: Single Line
  3. Background Texture:
  4. Background Finish: Baked Enamel Dark Brown
  5. Font Finish: Satin Polished
  6. Font: Helvetica Bold

7. Provide Clear Organic Coating for all surfaces: Air-dried acrylic coating equal to Incralac as developed by International Copper Research Corporation, 1.0-mil minimum dry thickness.

## 2.05 MISCELLANEOUS MATERIALS

- A. Fasteners: Unless otherwise indicated, use concealed fasteners in all work of this Section. Fabricate fasteners from metals that are non-corrosive to sign surface materials and mounting substrates.
  1. Fasteners shall be roundhead or countersunk, and tamperproof.
  2. Spacers and washers shall be neoprene.
- B. Anchors and Inserts: Provide non-ferrous metal or stainless steel anchors and inserts for exterior installations. Provide toothed steel or lead expansion bolt devices for drilled-in place anchors. Furnish inserts to other trades when required to be cast into concrete.
- C. Permanent Bond Adhesive: Provide structural adhesive suitable for bonding a variety of dissimilar industrial surfaces over a wide temperature range, similar to "PR-943", manufactured by Products Research and Chemical Corporation, Gloucester City, NJ 08030, or approved equal.

## 2.06 FABRICATION

- A. General: Fabricate work of this Section in conformance with requirements indicated for materials, thicknesses, finishes, colors, designs, shapes, and sizes. Owner and/or Architect will provide name of complex.
- B. All Sign Types: Fabricate flat and curved signs using metals and shapes of sufficient thickness, with reinforcing when necessary, to produce sufficient flatness, free of "oil canning", and to impart sufficient strength for size, design, and application indicated.
  1. Fabricate brackets, and fittings from extruded aluminum to suit sign for panel construction and mounting conditions indicated; all seams welded and ground smooth prior to painting.
  2. Colors: Where applied graphics require color selection, provide colors as indicated and as approved by the Owner and Landscape Architect.
  3. Graphic Content and Style: Provide graphics for signs in letter style, size, spacing, and arrangement indicated.

## 2.07 FINISHES

- A. Acrylic Polyurethane Finish: Painted surfaces shall be painted with Matthews Acrylic Polyurethane, manufactured by Matthews Paint Company, Wheeling, IL 60090, or approved equal, in strict compliance with coating system manufacturer's instructions and recommendations for surface preparation, mil thickness, curing and other requirements.
- B. Colors and Surface Textures: For exposed sign material that requires selection of materials with integral or applied colors, surface textures, or other characteristics related to appearance, provide color matches as selected by the Owner and Landscape Architect.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Locate sign units and accessories where shown and scheduled. Use mounting methods indicated.
- B. Fastening to In-Place Construction: Provide anchorage devices and fasteners necessary for securing work of this Section to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors required.
- C. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of work of this Section.
- D. Erect work square, plumb and true, accurately fitted, and with tight joints and intersections. All anchors, inserts and other members to be set in concrete shall be furnished loose by this trade to be built-into concrete and granite by those trades. Avoid field cutting or drilling to greatest extent possible.
- E. Brace work rigid and secure to surrounding construction. Provide temporary bracing or anchors where required.
- F. Fit exposed connections accurately together to form hairline joints, except where invisible joints are indicated. Shop weld connections.
- G. Electrolytic Isolation: Where dissimilar metals are to come into contact with one another, or in contact with concrete, isolate by application of a heavy coating of bituminous paint on contact surfaces in addition to shop coat specified above. Do not permit the bituminous paint in any way to remain on surfaces to be exposed or to receive sealant.

### 3.02 PROTECTION OF WORK

- A. Adjacent work, etc., shall be protected from stain and damage during entire operation. Damaged and stained areas shall be replaced or repaired to equal their

original conditions.

- B. Completed walkways shall be adequately protected from damage or stain until acceptance by the Owner.

### 3.03 INSPECTION

- A. The Installer shall examine substrates, supports, and conditions detrimental to the proper completion of work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning of installation will be construed as installer accepting substrates and conditions.

### 3.04 SIGN INSTALLATION

- A. Sign and granite sign posts shall both be installed by sign vendor.
- B. General Installation Requirements: Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this section.
- C. Installation: Install units plumb, level, in alignment and plane without warp or rack. Anchor securely in place.

### 3.05 TOLERANCES

- A. The following allowable installed tolerances are allowable variations from locations and dimensions indicated by the Contract Documents. Do not add these tolerances to any allowable tolerances indicated for other work.
  1. Allowable Variation from True Plumb:  $\pm 1/8$  in. in 10 ft. - 0 in.
  2. Allowable Variation from True Line:  $\pm 1/8$  in. in 10 ft. - 0 in.
  3. Allowable Variation from True Level:  $\pm 1/16$  in. in 10 ft. - 0 in.

### 3.06 ADJUSTING, CLEANING, TOUCH-UP, AND PROTECTION

- A. Clean exposed surfaces using manufacturer's printed instructions recommending materials and methods to be used. Remove and replace work which cannot be successfully cleaned.
- B. Touch-up damaged coatings and finishes. Eliminate visible evidence of repair.
- C. Provide temporary protection during the course of work, and immediately after completion to ensure work is not damaged or deteriorated in any way at time of final acceptance. Remove temporary protections and reclean as necessary immediately prior to final acceptance.

END OF SECTION

## SECTION 16100

## ELECTRIC SERVICE IMPROVEMENTS

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine and coordinate all Contract Drawings and other sections of the specifications for requirements which affect work of this section whether or not such work is specifically mentioned in this section. Coordinate work with other trades to assure the steady progress of all work under the Contract. The Contractor shall refer to the Contract Documents for all new work and coordinate how it relates to electric service improvements.
- C. The Contractor shall furnish a complete finished product, which meets all applicable codes and standards, and the intent and specific requirements of the Drawings and specifications for this project. It is the intent of these specifications that the electrical system shall be suitable in every way for the service (and use) required. All materials and all work, which may be reasonably implied as being incidental to the work of this Section, shall be furnished at no extra cost to the Owner.
- D. As used in this Section, “*provide*” means “furnish and install”, “*furnish*” means “to purchase and deliver to the project site complete with every necessary appurtenance and support”, and “*install*” means “to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project”.
- E. Perform work and provide (furnish and install) material and equipment as shown on Drawings and as specified, or indicated, in this Section of the specifications. Completely coordinate work of this Section with work of other trades and provide a complete and fully functional installation. Drawings and specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation.
- F. Remove all debris caused by Contractors’ work.
- G. Provide demolition and relocation of existing electrical items as shown on the drawings.

## 1.02 SCOPE OF WORK

- A. Under this Section, the Contractor shall furnish all labor, materials, equipment and transportation necessary to install the following:
1. New underground electrical service from existing utility pole #76-14. Electrical service to be 100A, single-phase 120/240V, installed in 2" conduits, installed into new 100A, main service panelboard installed in new outdoor NEMA 3R electrical cabinet, provided with utility meter socket. Work shall include all conduit, cable, excavation, backfill, surface restoration, concrete foundation, grounding and all associated equipment necessary for a complete installation.
  2. Provide power to water spray feature controller, duplex receptacles, light in new electrical cabinet and other equipment as shown on Contract Drawings.
- B. The Contractor shall include in his/her bid any charges by the utility companies or other authorities for work done by them and charged to the Contractor, or for any other fees or expenses required by utility companies necessary to complete the work of this Contract. NSTAR fee for bringing secondary service to the site is \$250.
- C. The Contractor shall provide any additional labor and materials required by the utility companies to complete the work of this Section, at no additional cost to the Owner.
- D. All work performed under this Section shall be performed by a MA licensed Electrician.
- E. The Contractor is required to apply and obtain all permits required for this work. The City of Waltham will waive all fees associated with these applications.
- F. An NSTAR Electric - Work Order Application has been submitted to NSTAR for the work specified in this section and as indicated on the Drawings.

## 1.03 COORDINATION

- A. Coordinate all work with representatives of the City of Waltham Wiring Department Electrical Inspector, Parks and Recreation Department, and NSTAR, as required and applicable at no additional cost to the Owner.
- B. The Contractor shall be responsible for arranging for all inspections required by the City or the Utility companies involved. Contact Person: John Nedza, City of Waltham Wiring Department (781-314-3175).



## 1.04 REFERENCES

- A. The following standards and definitions are applicable to the work of this Section to the extent referenced herein:

ANSI/NEMA FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

ANSI/NFPA 70 National Electrical Code, with state amendments where applicable.

NECA "Standard of Installation."3

NEMA RN 1 Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.

NEMA TC 2 Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80).

NEMA TC 3 PVC Fittings for Use with Rigid PVC Conduit and Tubing.

## 1.05 STANDARDS AND REQUIREMENTS

- A. All electrical equipment required under this section shall comply with the latest requirements and standards of the National Electric Code, Federal Specifications, the National Electrical Manufacturer\*s Association, the Underwriters Laboratories, Inc., the ASTM, ANSI, and the American Institute of Electrical Engineers.

## 1.06 SUBMITTALS

- A. Submit shop drawings and manufacturer\*s specifications for all materials to be furnished under this Section including:
1. Conduits and Wiring.
  2. Panelboards.
  3. Service Cabinets and Equipment.
  4. Circuit Breakers.
  5. Lighting and Bracket Assemblies.
  6. Wiring Devices and Receptacles.
  7. Meter Sockets
  8. Grounding
- B. Submit samples of materials for use under this Section as directed by the Owner or Owner\*s Representative.
- C. The Engineer\*s review shall be only for conformance with the design concept of the project and compliance with the specifications and Drawings. The

responsibility of, and the necessity of, furnishing materials and workmanship required by the specifications and Drawings which may not be indicated on the shop drawings is included under the work of this Section.

#### 1.07 INSPECTIONS AND FEES

- A. Obtain all necessary permits and licenses, and pay all fees for permits and inspections. Permit fees are the responsibility of the Contractor as part of his bid, as is all coordination with the local utility, NSTAR.
- B. The following NSTAR Work Orders have been filed by the Owner with NSTAR. Use the following Work Order numbers when co-ordinating this work with NSTAR:
  - 1. NSTAR WO# - 1810547
- C. Copies of the Work Orders will be provided to the successful bidder upon request.

#### 1.08 ELECTRIC UTILITY

- A. The Electric Utility for this project is NSTAR Electric. All coordination with the Electric Utility is the responsibility of the Contractor. All work and materials for the electric service shall be in accordance with the requirements of the Electric Utility, and are to be met under this Section and included in the bid price of the Contractor. Contractor shall adhere to NSTAR\*s *“Information and Requirements for Electric Service (2008 or later)”*.

#### 1.09 AS-BUILT DRAWINGS

- A. After completion of the electrical installation, the Contractor shall furnish “As-Built” drawings showing all conduits, cables, cabinets, light fixtures, etc. to scale with dimensions where required. Instruction sheets and parts lists covering all operating equipment will be bound into a folder and furnished to the Owner in duplicate.

### PART 2 - MATERIALS

#### 2 .01 GOVERNING SPECIFICATIONS FOR ALL MATERIALS

- A. Unless stipulated otherwise, all materials shall be furnished in accordance with the State and Local Building Codes and the requirements of NSTAR.

#### 2 .02 CONDUIT AND WIRES

- A. Conduit shall be as required and meet all Federal, State and Local electric codes. Conduit shall be gray heavy wall rigid plastic conduit of homogenous polyvinyl chloride construction with standard wall thickness. Conduit shall conform to the NEMA Standards Publication TC-2 for Schedule 80 type EPC Conduit, extra rigid.

- B. All conduit shall comply with ASTM D1784 and all solvent cements shall comply with ASTM D2564.
- C. Use wires in the quantities, sizes and types to meet code requirements.
- D. Use a 3/8" polypropylene pullrope within the required conduit run for pulling of electrical wiring.
- E. Use galvanized steel and riser extensions at connection to existing utility pole.
- F. Unless otherwise noted, conductors for power, lighting, and grounding *above grade* shall be No. 12 through No. 8 AWG, NEC type THWN/THHN, meeting the requirements of UL 83. Conductors for power and lighting shall be no smaller than No. 12 AWG.
- G. Conductors for power, lighting, grounding, and control *below grade* (and in wet locations) shall be No. 2 AWG and larger, NEC type XHHW (or XHHW-2), meeting the requirements of NEMA WC7 and ICEA S-66-524.
- H. All conductors shall be annealed copper, 98% conductivity, Class B stranded, except conductors used for power and lighting circuits No. 10 AWG and smaller which may be solid. All conductors should be rated for 600 volts or less, with a thermal rating of 90° C.
- I. The outside covering of all wiring for power, lighting, grounding, and control uses shall be color coded to identify polarity as follows:

	208Y/120 V 3 Phase	240D/120 V 3 Phase	480Y/277 V 3 Phase
Phase A	Black	Black	Brown
Phase B	Red	Red	Orange
Phase C	Blue	Orange	Yellow
Neutral	White	White	Gray
Ground	Green	Green	Green

2 .03 PULLBOXES

- A. Pullboxes shall be in accordance with the City of Waltham Wiring Department and as otherwise designated on the contract drawings.
- B. A cast iron frame and steel cover shall also be used in conjunction with the precast concrete pullbox installation, in compliance with the referenced specifications.

2 .04 WIRE AND CABLE CONNECTORS AND DEVICES

- A. Wire and cable connectors and devices shall meet the requirements of UL 486. Connectors, including miscellaneous nuts, bolts, and washers shall be silicon bronze. Ferrous materials shall not be used.

## 2 .05 BOXES

- A. Outlet and Switch Boxes: NEMA OS 1.
- B. Weatherproof Outlet Boxes: NEMA 3R, NEC 410-57, UL 498 & 514 Outdoor Outlet Boxes for receptacles shall be weatherproof, NEMA 3R rated, and manufactured of stainless steel or aluminum. All hardware (screws, etc.) shall be stainless steel. Covers for outdoor outlet receptacles shall be weatherproof, polycarbonate bubble-type, allowing use of the receptacle with the cover in the "closed" position. Gaskets shall be made of ethylene propylene rubber, or approved equal.
- C. Pull Boxes, Junction Boxes, and Equipment Enclosures: NEMA ICS 6.
- D. Pull boxes, junction boxes, and equipment enclosures shall be of NEMA Type 1 construction for indoor use, and NEMA Type 3R construction for outdoor or wet location use, unless otherwise noted.
- E. Box sizes shall not be less than that required by the Massachusetts Electrical Code.

## 2 .06 WIRING DEVICES

- A. Wiring Devices: NEMA WD 1.
- B. Wiring devices for shall be specification grade, 20 ampere, ivory with Type 302 stainless steel plates. Ground fault current interrupting (GFCI) devices shall be provided where specified and/or required by applicable codes.

## 2 .07 PANELBOARDS

- A. Panelboards: NEMA PB1, and UL 67.
- B. Provide new 100A, 120/240V single-phase panelboard with 100A main circuit breaker and branch feeder breakers as listed on panel scheduled provided with Contract Drawings.
- C. Panelboards shall be door-in-door construction with copper bus. Circuit breakers shall be molded case, thermal magnetic, bolt-on type rated as noted, and rated to match panelboard voltage and interrupting rating (22 kA). All panelboard doors shall open full 90 degrees without conflict with cabinets and other equipment. No modifications to panelboards or doors shall be made to accommodate installation or removal inside of Electrical Cabinet.

## 2 .08 METER SOCKETS

- A. Meter Sockets: UL 414, UL 486B, and ANSI C12.7.
- B. Outdoor meter sockets are to be NEMA 3R. Unless otherwise noted, meter sockets shall be ringless, with lever bypass, tin plated connections, and have provision for a fifth terminal on single-phase applications. Meter Sockets shall also meet the requirements of the local electric utility.
- C. Meter Socket shall be either heavy duty or medium duty, 100 ampere minimum, ringless, 5 terminal, with approximate dimensions of 19"H x 13"W x 5"D. (Milbank U2860-XL-5T9 or approved equal).

## 2 .09 WARNING TAPE

- A. Warning tape shall be six (6) inches wide, polyethylene not less than 3.5 mil thick with a minimum strength of 1,500 psi and shall be manufactured by W.H. Brady Co., Panduit Corp., or approved equal. Tape shall be red for electric conduit, and red or yellow for communication conduit. Tape shall have black lettering on two lines as indicated below:

CAUTION CAUTION CAUTION  
BURIED ELECTRIC LINE BELOW

## 2 .010 ELECTRIC CONTROL CABINET

- A. Outdoor weatherproof electrical equipment enclosure: NEMA 3R.
- B. Electric Control Cabinet shall be new aluminum enclosure cabinet, 55 9/16" height x 44" width x 26" width, constructed of aluminum, .125" thick, painted with an approved black powder coating and mounted on a concrete pad. Cabinet to be Model Number MEA554426 as Manufactured by Mass Electrical Apparatus, 42 Oakville Street, Lynn, MA, or by Commercial Sheetmetal Co. (or approved equal), with 12 gauge steel panel. Cabinet shall be factory painted powder-coat black; field painting is not acceptable. Contractor is responsible for sizing cabinet and shall propose a cabinet that can include all of the required equipment, meeting the spacing requirements if the NEC. Cabinet dimensions listed are typical.
  - 1. Material: 0.125 5052-H32 Aluminum.
  - 2. Ventilation on roof and door.
  - 3. Open bottom.
  - 4. Stainless Steel full length piano hinge.
  - 5. Single door design with captive door restraint.
  - 6. Stainless steel padlockable handle, 3 point latching mechanism with nylon rollers at top and bottom.
  - 7. Door frame double flanged on all four sides.
  - 8. 3/4" Plywood back panel treated with (2) coats clear polyurethane.
  - 9. Cabinet shall be smooth black powder coat inside and out; field painting is not acceptable.
- C. The cabinet shall be mounted on a cement concrete base as indicated in the

Drawings. Forms, reinforcing, and cement concrete cast in place for all cabinets shall conform to Section 03300 - Cast-in-Place Concrete.

- D. Provide grounding in the form of two (2) 5/8" diameter x 8'-0" long copperweld ground rods for each foundation, connected with a loop of #1/0-#4/0 Awg bare copper stranded ground wire (as shown), leaving a 3 foot long tail to ground the enclosure, transformers, etc. Buried loop for Electrical Cabinet to be buried approx. 6-8" below finished grade, offset approximately 12-inches from the edge of concrete foundation on all four sides.
- E. Provide in the electrical enclosure cabinet on the concrete pad, a 0.25 x 2" x 24" copper grounding bus bar with 2 UL recognized standoff insulators, 2 stainless steel mounting brackets, and 4 stainless steel assembly bolts and lock washer.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. This Section covers the requirements for installation of materials, proper workmanship, testing, cleaning, grounding, and work methods to be followed by the Contractor. This Section also includes specific instructions and to be used in conjunction with the contract Drawings. Any discrepancies noted between the specification, Drawings, and actual installation shall be reported immediately to the Owner, Engineer, and Architect. Failure on the part of the Contractor to report discrepancies immediately will be considered negligent.
- B. Contractor is responsible for coordinating work with other trades, Owner, and Architect\*s schedule. Work will be coordinated such that systems can be properly located, and conflicts and delays are avoided. Contractor shall consider commencement of work acceptance of existing conditions.

#### 3.02 MATERIALS AND WORKMANSHIP

- A. Work shall be executed in workmanlike manner and shall present neat, rectilinear and mechanical appearance when completed. Do not run raceway exposed unless shown exposed on Drawings. Material and equipment shall be new and installed according to manufacturer\*s recommended best practice so that complete installation shall operate safely and efficiently.

#### 3.03 CONTINUITY OF SERVICES

- A. Do not interrupt existing services without Owner\*s, Utilities, Engineer\*s and Architect\*s approvals.

#### 3.04 TESTING, INSPECTION AND CLEANING

- A. Test wiring and connections for continuity and grounds before fixtures are connected; demonstrate insulation resistance by megger test as required at not less than 500 volts. Insulation resistance between conductors and grounds for secondary distribution systems shall meet National Electrical Code (NEC) and

International Electrical Testing Association (NETA) requirements.

- B. Verify and correct as necessary: voltages, tap settings, trip settings and phasing on equipment from secondary distribution system to point of use. Test secondary voltages at transformers, bus in panelboards, and at other locations on distribution systems as necessary. Test secondary voltages under no-load and full-load conditions.
- C. Test lighting fixtures with specified lamps in place for 100 hours. Replace lamps that fail within 90 days after acceptance by Owner at no extra cost to Owner (no exceptions).
- D. Provide necessary testing equipment and testing services.
- E. Failures or defects in workmanship or materials revealed by tests or inspection shall be corrected promptly and retested. Replace defective material.
- F. Clean panels and other equipment. Panelboard interiors shall be cleaned and vacuumed. Equipment with damage to painted finish shall be repaired to Engineer\*s or Architect\*s satisfaction. After completion of project, clean exterior surfaces of electrical equipment.

### 3.05 WIRING METHODS

- A. Install wire and cables in approved raceways as specified and as approved by authorities that have jurisdiction.
- B. Follow homerun circuit numbers and/or notes as shown on Drawings to connect circuits to panelboards. Where homerun circuit numbers are not shown on Drawings, divide similar types of connected loads among phase buses so that currents are approximately equal in normal usage.
- C. Run concealed conduit in as direct lines as possible with a minimum number of bends of longest possible radius. Bends shall be free from dents or flattening. The exact locations and routing of conduit shall be determined by the Contractor subject to the approval of the Owner and Engineer.
- D. Polarity of all electrical connections shall be observed in order to preserve phase relationship in all feeders and equipment.
- E. Splices shall be made in neat, workmanlike manner using approved mechanical connectors. After splicing, insulation equal to that on the spliced wires shall be applied at each splice. Splices are permitted only in junction boxes, outlet boxes, or other permanently accessible locations. Splices installed in electric handholes shall be weather and waterproof, pre-molded polymer splices. Hand taping of splices below-grade is not acceptable.

### 3.06 GROUNDING

- A. Bond and ground equipment and systems connected under this Section in

accordance with standards of the NEC and other applicable regulations and codes.

- B. Conduit system shall be electrically continuous throughout, grounded at service entrance. Equipment frames, enclosures, boxes, etc. shall be grounded by use of green-jacketed (or bare copper) ground, sized as per Table 250-95 of the NEC.
- C. Green bonding jumper shall be installed in flexible conduits.
- D. Copper fittings for ground connections shall conform to the requirements of ASTM B 30. All bolts, u-bolts, cap screws, nuts, and lock washers for copper fitting shall be of approved corrosion-resisting material. Compression connectors required for all below grade grounding connections.
- E. Ground Rods shall be 5/8" diameter and 8' in length, copperweld as required by applicable codes (NEC, NESC). Bonding connections to ground rods shall be permanent, welded or crimped, with copper connectors. All wire used for grounding shall be no smaller than #4 Awg copper, stranded conductor.

### 3.07 ELECTRIC SERVICE INSTALLATIONS

- A. Install all equipment required under this Section in accordance with all requirements of the City of Waltham Wiring Department, all governing codes, and as applicable, in accordance with all the requirements of NSTAR.

### 3.08 ELECTRIC SERVICE INSTALLATIONS SPECIAL INSTRUCTIONS

- A. Contractor shall provide new underground single-phase (120/240 volt), 3-wire electric service from new NSTAR utility pole to new outdoor electric control cabinet.
- B. Service cable shall be 3-#1AWG type XHHW (or XHHW-2), 600 V, as approved by NSTAR, and meet all requirement of the NEC, Massachusetts Electrical Code, and the City of Waltham Public Works Department and Inspectional Services Department.
- C. Contractor shall provide new outdoor NEMA 3R electric control cabinet. Cabinet enclosure shall be by Commercial Sheet Metal Company, or approved equal. Contractor shall coordinate the incoming underground 100-amp, three (3) wire, single phase service from the NSTAR utility pole to the new metering cabinet.
- D. Contractor shall provide new meter socket (100 amp, 5 terminal), and 100 ampere load-center distribution panel board in NEMA 1 enclosure, mounted inside of cabinet. Panelboard shall have 2-pole main breaker, rated 100A (22 kA), and two (2) 20A (22kA) branch circuit breakers, and four (4) spare 20A (22kA) circuit breakers.
- E. Install 120V GFCI receptacle, porcelain light bulb socket, 75W Incandescent bulb, and electrical switch in electrical enclose on panelboard.
- F. Install 120V, 20A single-phase feed from service panel to 120V GFCI receptacle,



electrical switch, and porcelain light bulb socket, typically 2w-#12Awg w/ground.

- G. Install 120V, 20A single-phase feed from service panel to spray/irrigation controller, typically 2w-#12Awg w/ground.
- H. Contractor shall coordinate with local utility for installation of new service pole on property, to be fed from existing utility poles.

### 3.09 INSPECTIONS

- A. The Contractor shall contact the City (refer to paragraph 1.03 B) to arrange for inspection prior to filling any electrical trenches.

END OF SECTION

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 83)

DEED & PLAN REFERENCES:

DEED BOOK 5610 PAGE 485 RECORDED AT MIDDLESEX COUNTY SOUTH REGISTRY OF DEEDS. DEED BOOK 13317 PAGE 192 RECORDED AT MIDDLESEX COUNTY SOUTH REGISTRY OF DEEDS. DEED BOOK 48947 PAGE 534 RECORDED AT MIDDLESEX COUNTY SOUTH REGISTRY OF DEEDS. PLAN BOOK 29501 PAGES 332-333 RECORDED AT MIDDLESEX COUNTY SOUTH REGISTRY OF DEEDS ENTITLED PLAN OF LAND IN WALTHAM, MASS. (MIDDLESEX COUNTY) PREPARED FOR THE FIRST REPUBLIC CORPORATION OF AMERICA DATED OCTOBER 27, 1998 BY THE BSC GROUP. PLAN NO. 720 OF 2006 RECORDED IN MIDDLESEX COUNTY SOUTH REGISTRY OF DEEDS ENTITLED LIMITS OF ACTIVITY AND USE LIMITATION (AUL) PLAN, 221-257 CRESCENT STREET IN WALTHAM MASSACHUSETTS (MIDDLESEX COUNTY), DATED JUNE 7, 2006 BY THE BSC GROUP. PLAN BOOK 24034 PAGE 174 RECORDED IN MIDDLESEX COUNTY SOUTH REGISTRY OF DEEDS ENTITLED PLAN OF LAND IN WALTHAM, MASS. (MIDDLESEX COUNTY) PREPARED FOR THE FIRST REPUBLIC CORP. OF AMERICA DATED NOV. 10, 1993 BY THE BSC GROUP.

NOTES:

1. THE BEARINGS AND DISTANCES AND THE COORDINATES THEY ARE BASED ON SHOWN ON THIS PLAN ARE IN U.S. SURVEY FEET IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, CORS ADJUSTMENT (NAD83/CORS) AS DETERMINED BY GPS OBSERVATIONS MADE NOV. 11, 2010 USING THE KEYNET GPS VIRTUAL REFERENCE SYSTEM (VRS) 2. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88), REFERENCED TO MASS HIGHWAY STATION CR 7 IN NORTH ABUTMENT OF PROSPECT STREET BRIDGE OVER CHARLES RIVER, CHISEL SQUARE IN SOUTHEAST CORNER OF GRANITE WINGWALL.

UTILITY NOTE:

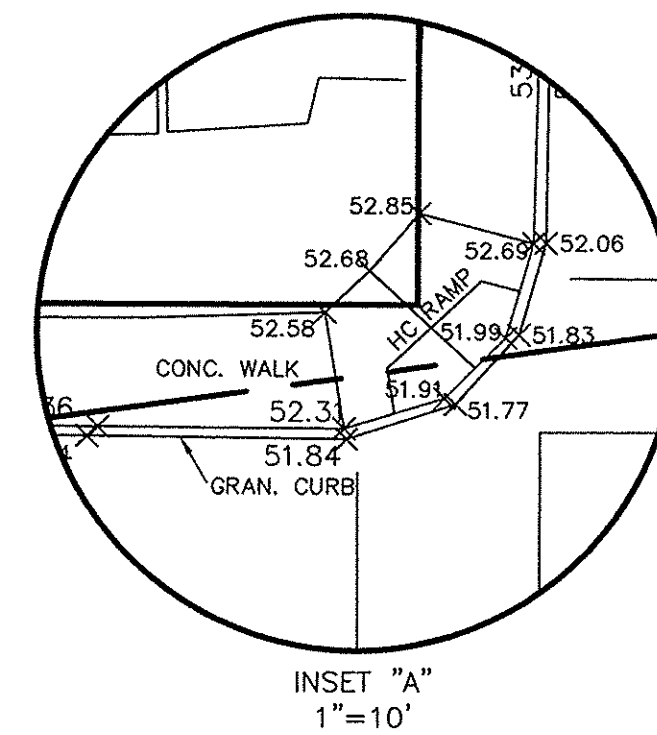
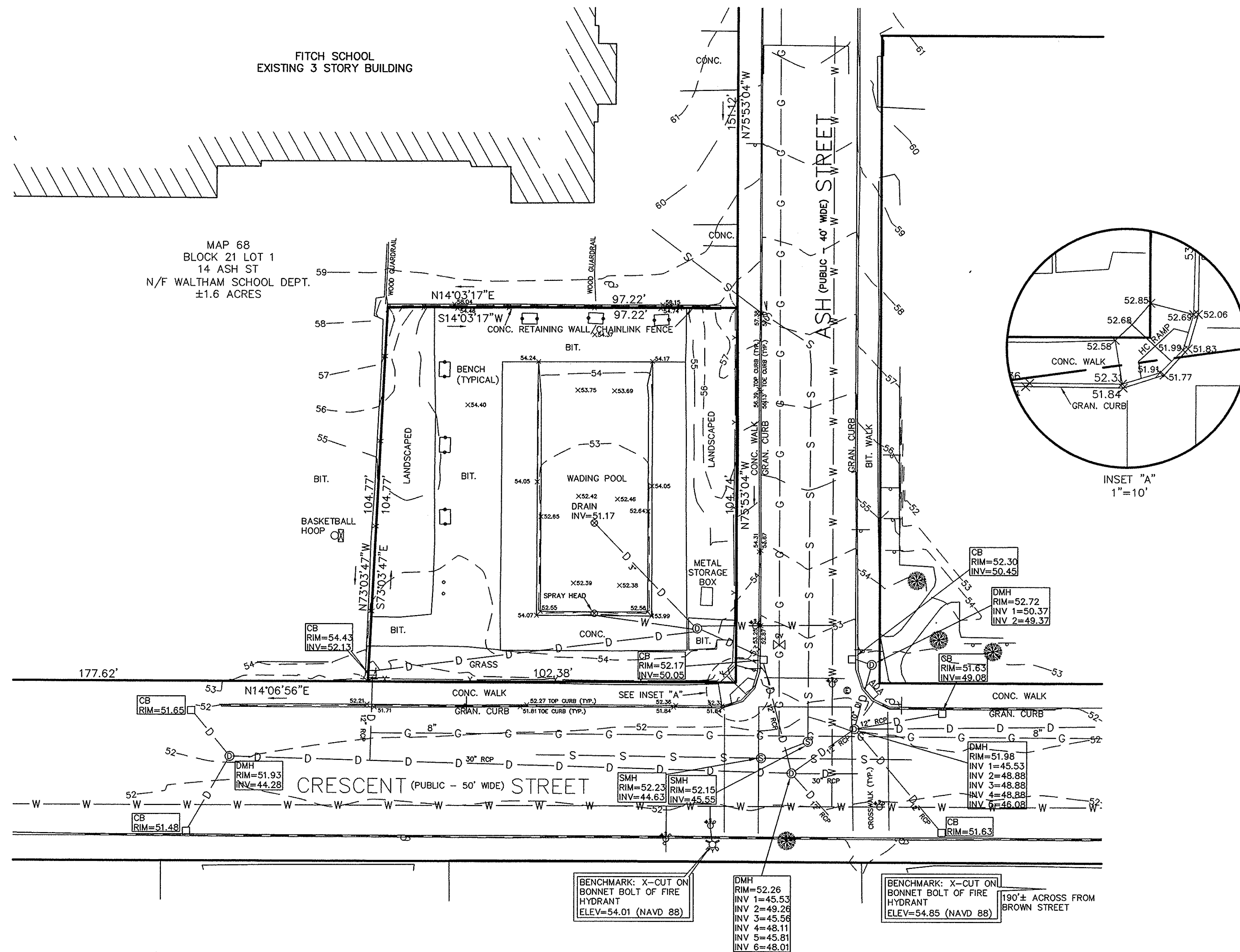
ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. BEFORE DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACK FILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC & PRIVATE, MUST BE NOTIFIED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS. ALPHA LS ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE FUTURE CONNECTIONS, THE APPROPRIATE UTILITY ENGINEERING DEPARTMENTS MUST BE CONSULTED. CALL "DIG SAFE" AT 1-888-DIG SAFE.

ZONING:

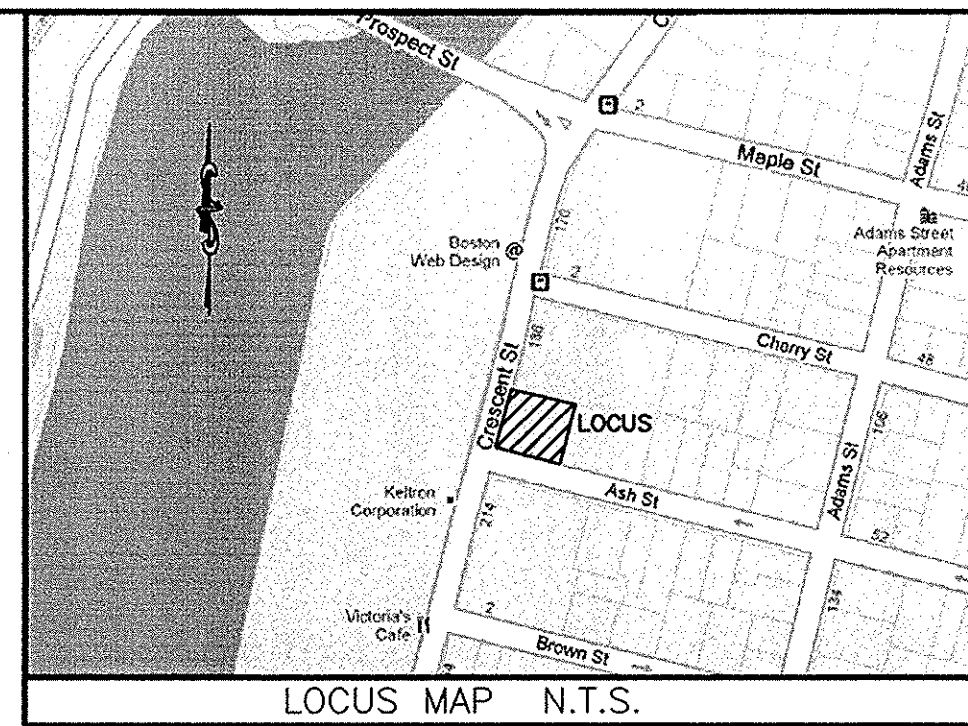
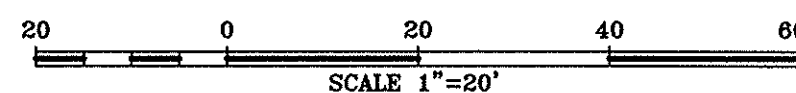
ZONE: RESIDENCE B (RB) SETBACK REQUIREMENTS: F: 15 S: 10 R: 30 LOT FRONTAGE: 60'

FLOOD PLAIN:

SUBJECT PROPERTY IS IN AN UNSHADED ZONE X (NOT A SPECIAL FLOOD HAZARD ZONE) PER FEMA FIRM NUMBER 25017C0551E, EFFECTIVE DATE, JUNE 4, 2010.



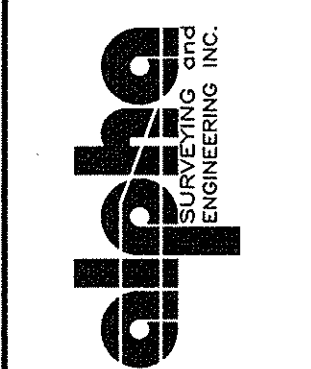
SYMBOL LEGEND table listing symbols for Gas Gate, Tree, Utility Pole, Hydrant, Sign Post, Water Gate, Electric Manhole, Sewer Manhole, Drain Manhole, Catch Basin, Gas Line, Drain Line, Sewer Line, Water Line, Fence, Bituminous, Concrete, X 50.00, and ADA.



PREPARED FOR CAROLYN COONEY & ASSOC. 13 ELM STREET MILFORD, MA.

EXISTING CONDITIONS PLAN FITCH SCHOOL 14 ASH STREET IN WALTHAM, MASSACHUSETTS

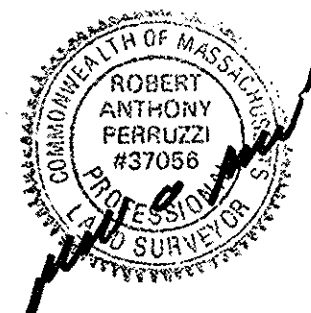
ALPHA SURVEYING AND ENGINEERING INC. 680 BELMONT STREET WILMINGTON, MASSACHUSETTS 02346 (508) 295-5505



I CERTIFY THE LOCATIONS ELEVATIONS AND LOCATIONS SHOWN ON THIS PLAN RESULT FROM AN ACTUAL SURVEY MADE ON THE GROUND.

Signature of Robert Anthony Ferruzzi, Registered Professional Land Surveyor for Alpha Surveying & Engineering, Inc.

12-14-2010 DATE



REVISED 12-13-2010: TO ADDRESS CLIENT COMMENTS

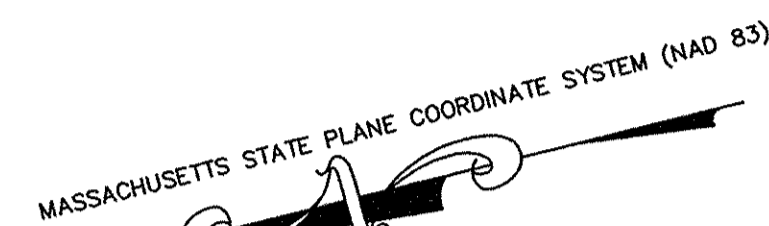
JOB NO. 10155 SHEET NO. 1 OF 1 DATE 12-14-2010

CITY OF WALTHAM  
PLANNING BOARD  
APPROVAL UNDER THE  
SUBDIVISION CONTROL  
LAW NOT REQUIRED

DATE

REGISTRY USE ONLY

THE ABOVE ENDORSEMENT  
DOES NOT CONSTITUTE CERTIFICATION AS  
TO COMPLIANCE WITH ZONING  
REQUIREMENTS EXCEPT AS TO FRONTAGE



STATEMENT OF PLAN INTENT:

THE INTENT OF THIS PLAN IS TO DIVIDE THE LOT DEPICTED ON ASSESSORS MAP  
68 BLOCK 21 LOT 1 ONTO THE TWO LOTS SHOWN HEREON AS LOTS A & B.

NOTES:

1. THE BEARINGS AND DISTANCES AND THE COORDINATES THEY ARE BASED  
ON SHOWN ON THIS PLAN ARE IN U.S. SURVEY FEET IN THE MASSACHUSETTS  
STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN  
DATUM OF 1983, CORS ADJUSTMENT (NAD83/CORS) AS DETERMINED BY GPS  
OBSERVATIONS MADE NOV. 11, 2010 USING THE KEYNET GPS VIRTUAL  
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DEED & PLAN REFERENCES:

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SOUTH REGISTRY OF DEEDS ENTITLED PLAN OF LAND IN WALTHAM,  
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OF DEEDS ENTITLED LIMITS OF ACTIVITY AND USE LIMITATION (AUL)  
PLAN, 221-257 CRESCENT STREET IN WALTHAM MASSACHUSETTS  
(MIDDLESEX COUNTY), DATED JUNE 7, 2006 BY THE BSC GROUP.  
PLAN BOOK 24034 PAGE 174 RECORDED IN MIDDLESEX COUNTY SOUTH  
REGISTRY OF DEEDS ENTITLED PLAN OF LAND IN WALTHAM, MASS.  
(MIDDLESEX COUNTY) PREPARED FOR THE FIRST REPUBLIC CORP. OF  
AMERICA DATED NOV. 10, 1993 BY THE BSC GROUP.

PARCEL DESCRIPTION

LOT A

BEGINNING AT A POINT ON THE EASTERLY SIDELINE OF CRESCENT STREET SAID  
POINT BEING N14°06'56"E A DISTANCE OF 102.38' FROM THE NORTH EASTERLY  
INTERSECTION OF CRESCENT AND ASH STREETS, THENCE:  
N14°06'56"E A DISTANCE OF 177.62' THENCE:  
S75°53'04"E A DISTANCE OF 255.86' THENCE:  
S14°06'56"W A DISTANCE OF 280.00' THENCE:  
N75°53'04"W A DISTANCE OF 151.12' THENCE:  
N14°03'17"E A DISTANCE OF 97.22' THENCE:  
N73°03'47"W A DISTANCE OF 104.77' TO THE POINT OF BEGINNING

LOT B

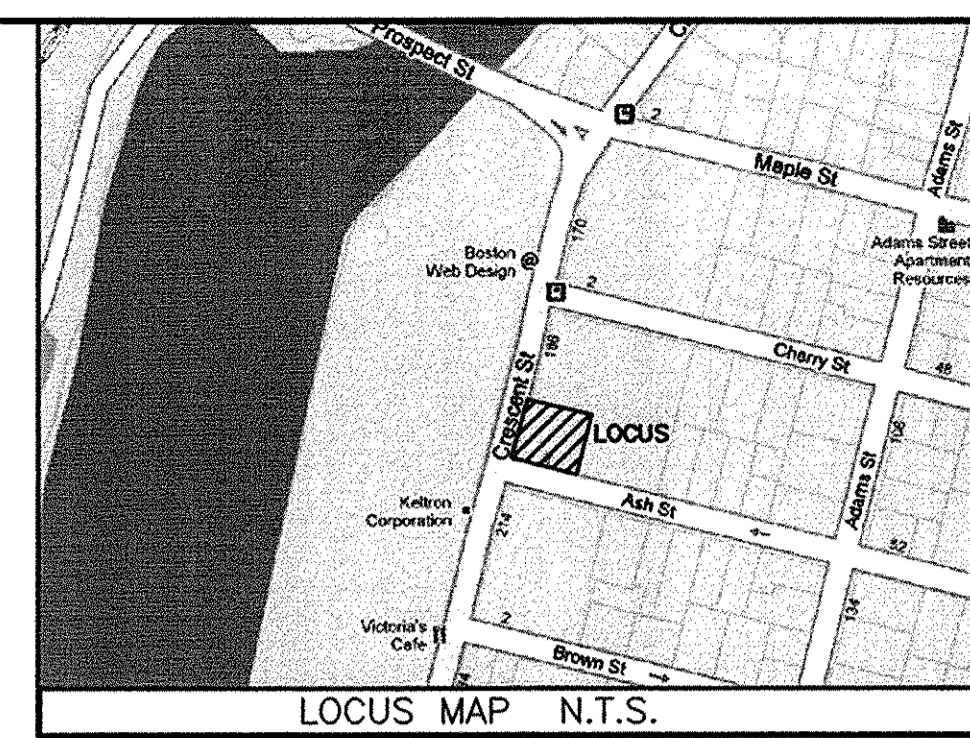
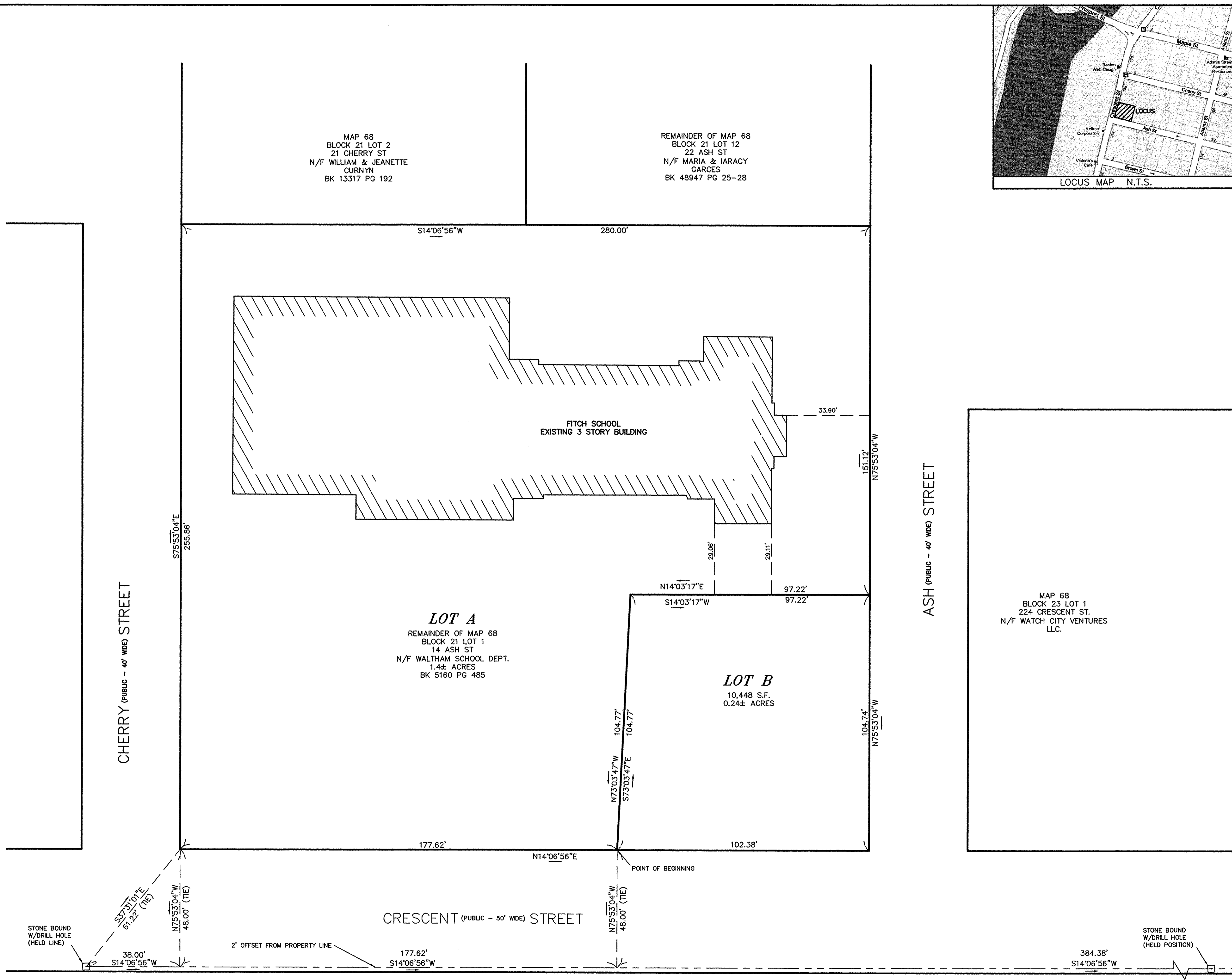
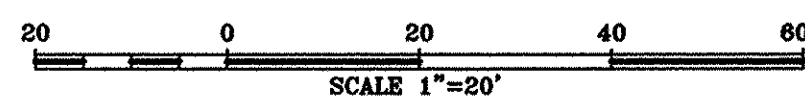
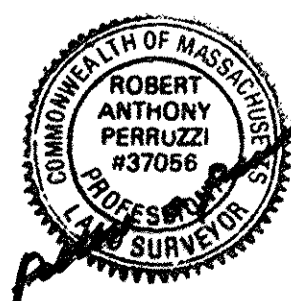
BEGINNING AT A POINT IN THE EASTERLY SIDELINE OF CRESCENT STREET SAID  
POINT BEING S14°06'56"W A DISTANCE OF 177.62' FROM THE SOUTH EASTERLY  
INTERSECTION OF CRESCENT AND CHERRY STREETS, THENCE:  
S73°03'47"E A DISTANCE OF 104.77' THENCE:  
S14°03'17"W A DISTANCE OF 97.22' THENCE:  
N75°53'04"W A DISTANCE OF 104.74' THENCE:  
N14°06'56"E A DISTANCE OF 102.38' TO THE POINT OF BEGINNING

ZONING:

ZONE: RESIDENCE B (RB)  
SETBACK REQUIREMENTS:  
F: 15 S: 10 R: 30  
LOT FRONTAGE: 60'

" I HEREBY CERTIFY THAT THIS PLAN CONFORMS TO  
THE RULES AND REGULATIONS OF THE REGISTERS OF  
DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS."

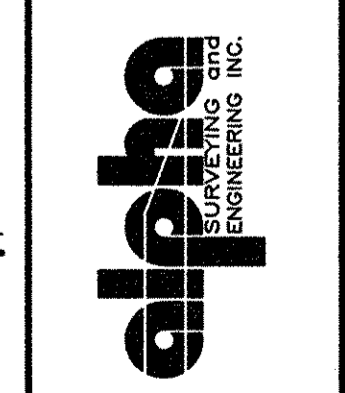
*Robert O. Panni* 12-14-2010  
REGISTERED LAND SURVEYOR DATE



PREPARED FOR  
CAROLYN COONEY & ASSOC.  
13 ELM STREET  
MILFORD, MA.  
DATE 11-15-10  
SCALE 1"=20'  
DRAWN AMC  
CHECKED RWP

APPROVAL NOT REQUIRED PLAN OF LAND  
FITCH SCHOOL  
14 ASH STREET  
IN WALTHAM, MASSACHUSETTS

ALPHA SURVEYING AND  
ENGINEERING INC.  
695 WAREHAM STREET  
MIDDLEBOROUGH, MASSACHUSETTS 02346  
(508) 295-5505



JOB NO. 10155  
SHEET NO. 1 of 1  
DWG. NO. 10155

NOTE:

1. REFER TO THE INSTALLATION DETAILS OF EACH PLAY PRODUCT & EQUIPMENT VAULT FOR SPECIFIC INSTALLATION DETAILS.
2. WATER DISTRIBUTION SYSTEM CONFIGURATION IS CONCEPTUAL AND REQUIRE APPROVAL PRIOR TO INSTALLATION.
3. SPLASHPAD ACTIVITY DECK & DRAIN LINES ARE RECOMMENDED TO HAVE A 1-2% SLOPE TO OPTIMIZE DRAINAGE.
4. ALL PIPING TO FEATURES ARE RECOMMENDED TO HAVE A 1-2% SLOPE FOR WINTERIZATION.
5. ALL LINE SIZING FROM LEGEND 1 ASSUMES A MAXIMUM DISTANCE OF 100 FEET BETWEEN THE WATER DISTRIBUTION MANIFOLD AND THE FURTHEST PLAY PRODUCT. DISTANCES ABOVE 100 FEET MAY REQUIRE AN INCREASE IN LINE SIZING.
6. ALL PIPING BETWEEN THE PLAY PRODUCTS & WATER DISTRIBUTION SYSTEM SHALL BE SCHEDULE 80 PVC.
7. REFER TO DRAWING L.4, UTILITY PLAN, FOR LOCATION OF DRAINAGE STRUCTURES AND LINE ROUTING.
8. WHEN CONNECTING MULTIPLE PLAY PRODUCTS TO ONE FEEDER LINE, THE JUNCTION POINT (SPLIT OR T) SHALL BE PLACED IN THE MID POINT BETWEEN EACH PLAY PRODUCT. FAILURE TO DO SO MAY RESULT IN UNEQUAL SPRAY EFFECTS BETWEEN PLAY PRODUCTS.
9. WIRING FROM THE CONTROLLER TO EACH ACTIVATOR SHALL BE #14 AWG. A TOTAL OF TWO (2).
10. ALL CONNECTIONS TO THE CONTROLLER SHALL BE PERFORMED USING AN APPROVED NEMA 4X CONNECTOR.
11. ANY REQUIRED WATER METER ON THE NEW WATER MAIN SHALL BE PROVIDED BY THE CITY OF WALTHAM.
12. MINIMUM 50 PSI REQUIRED AT THE INLET OF THE BACKFLOW PREVENTER AND PRESSURE REGULATING DEVICE.
13. VALVE NUMBER 1 IS LOCATED ON THE TOP LEFT OF THE MANIFOLD WHEN FACING THE MANIFOLD FROM INSIDE THE VAULT.
14. TOTAL COMBINED FLOW CAPACITY OF PLAY PRODUCT IS 145 GPM. MAXIMUM FLOW CAPACITY OF MANIFOLD IS 144 GPM.

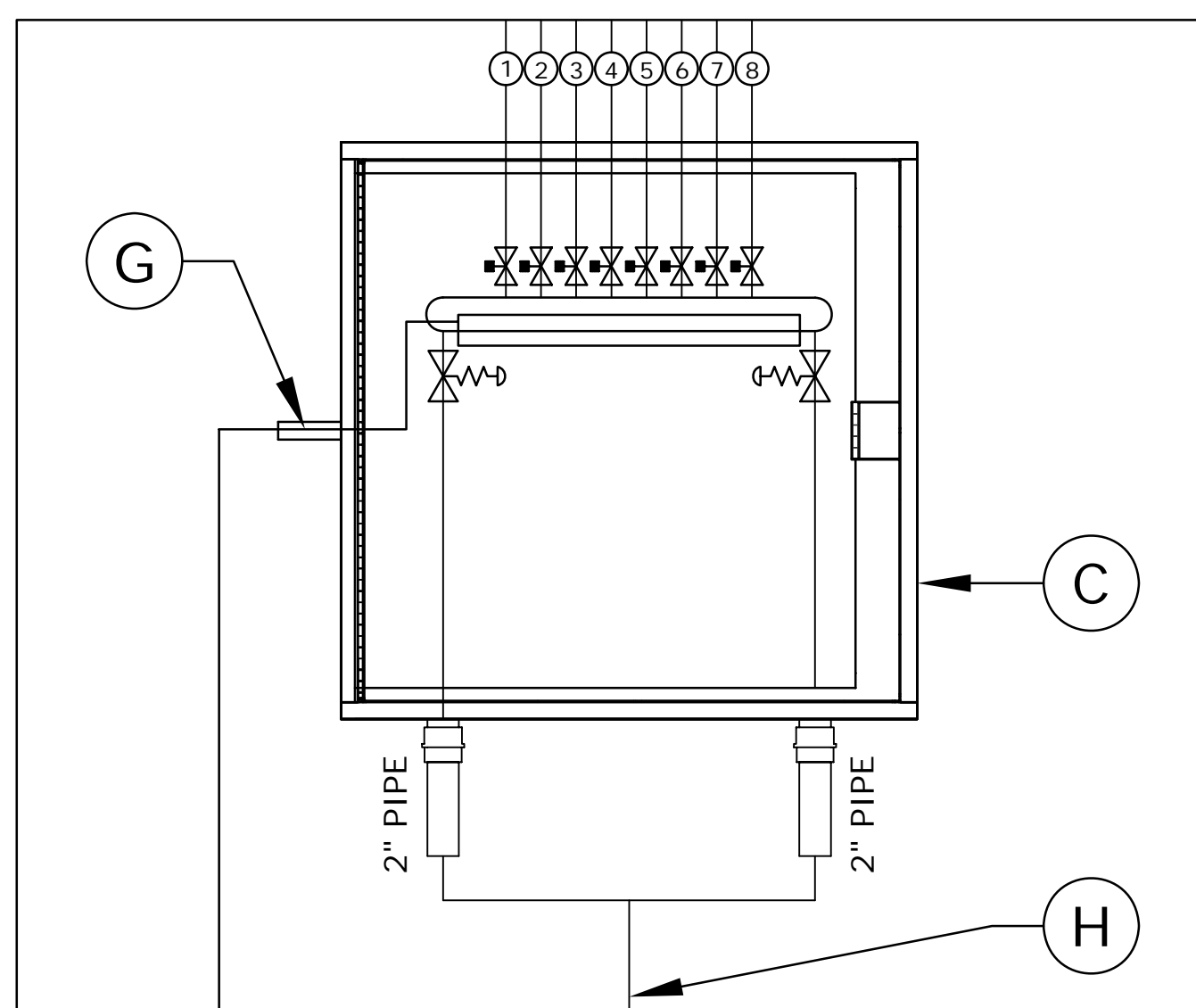
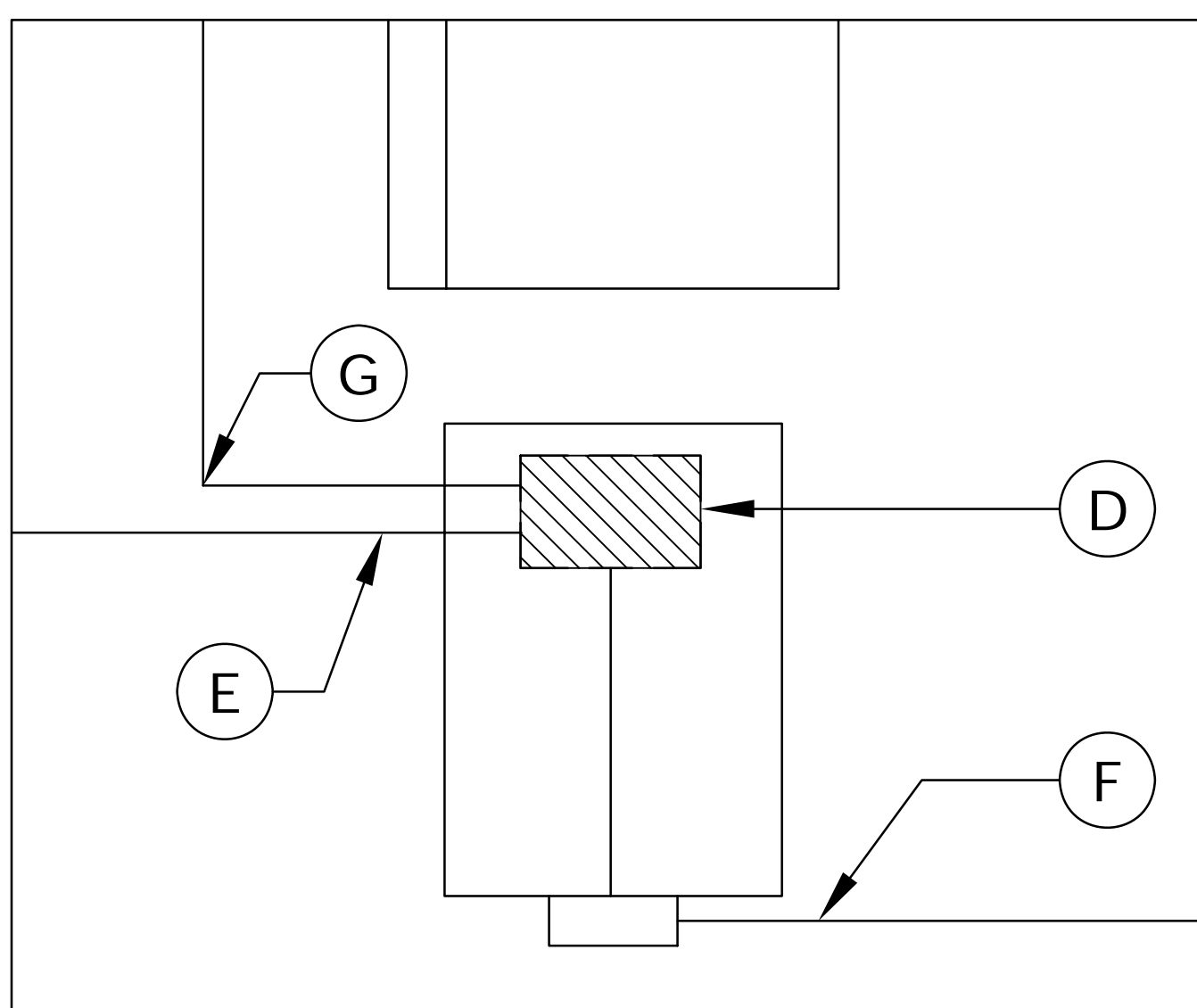
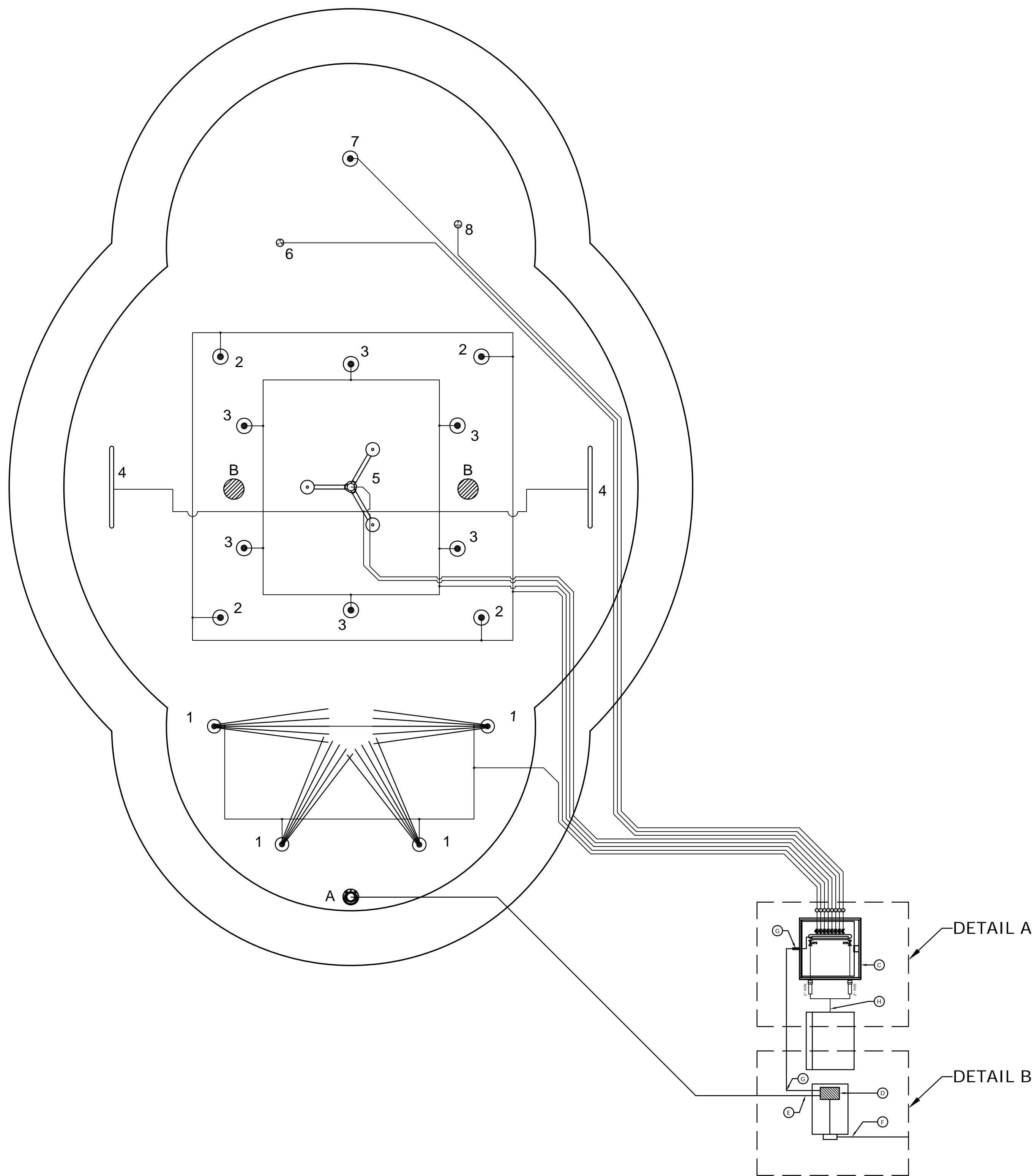
TOTAL AREA: 2550 ft<sup>2</sup> (237m<sup>2</sup>)  
 SPRAY AREA: 1850 ft<sup>2</sup> (172m<sup>2</sup>)

LEGEND -1

DETAIL NO.	LINE	PRODUCT	QTY	GPM	LINE SIZE
2 D.4	1	Rooster Tail VOR-303	4	50	2"
1 D.5	2	Ground Geyser VOR-301	4	20	1 1/2"
5 D.4	3	Directional Water Jet VOR-305	6	15	1 1/2"
1 D.6	4	Spray Loop VOR-519	2	15	1 1/2"
2 D.5	5	Three Bells No 1 VOR-7372	1	12	1 1/2"
3 D.5	6	Magic Mist No 1 VOR-7510	1	5	1 1/2"
4 D.5	7	Aqua Dome No 2 VOR-7530	1	14	1 1/2"
5 D.5	8	Foaming Geyser No 1 VOR-7020	1	14	1 1/2"

LEGEND -2

DETAIL NO.	CODE	PRODUCT	QTY	LINE SIZE
6 D.5	A	Bollard Activator No3 VOR-611	1	
1 D.7	B	Catch Basin	2	
3 D.4	C	Vortex 8 valve Equipment Vault w/Junction Box VOR-1608.0500		
1 D.4	D	Vortex 10 Output Smartflow 2 Controller VOR-710.6000		
3 E.3	E	Electrical Conduit from Controller to Activator; 2 Conductors #14 AWG W/Ground		1"
1,2 E.2	F	Electrical Service Line 120 VAC, 100AMP Service		3"
3 E.3	G	Electrical Conduit from Controller to Junction Box; 16 Conductors #14 AWG w/Ground		2"
3 D.8	H	Water Supply Line		2"
	☒	Solenoid Valve	8	
	☒	Pressure Regulator	2	



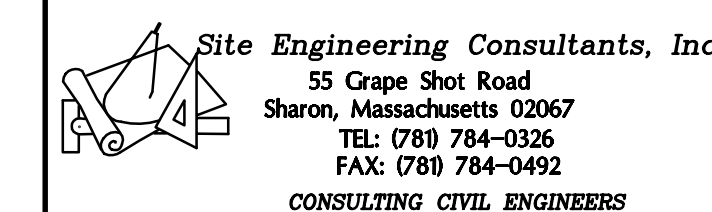
**3** DETAIL "B" ENLARGEMENT  
N.T.S.

**2** DETAIL "A" ENLARGEMENT  
N.T.S.

**1** SPRAY PAD PLUMBING & ELECTRICAL PLAN ENLARGEMENT  
SCALE: 3/16" = 1'-0"

**Carolyn Cooney & Associates**

Landscape Architecture / Planning  
 19 Elm Street, Millford, MA 01757  
 Telephone 508 478 8426, Facsimile 508 478 8607



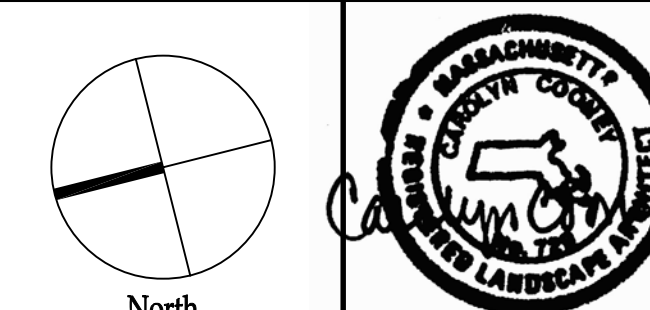
**POWER ENGINEERS, LLC**

P.O. Box 608  
 Shrewsbury, MA 01545-0608  
 (508) 642-0382  
 www.PowerEngineersLLC.com

Electrical Engineering, Power, Lighting,  
 Technical Studies and Utility Consulting

No.	Description	Date

REVISIONS



Project:

**FITCH SPRAY PARK  
 14 ASH STREET  
 WALTHAM, MA 02453**

Prepared For:

**WALTHAM PLANNING  
 DEPARTMENT  
 119 SCHOOL STREET  
 WALTHAM, MA 02451**

TITLE:

**SPRAY PAD PLUMBING  
 & ELECTRICAL PLAN**

Scale AS NOTED Date MAR 14, 2011  
 Drawn By DRB  
 Checked By CCC  
 Approved By CCC  
 Project No. 1021.00

DWG No. **L5**

FITCH SCHOOL  
EXISTING 3 STORY BUILDING

MAP 68  
BLOCK 21 LOT 1  
14 ASH ST  
N/F WALTHAM SCHOOL DEPT.  
±1.6 ACRES

LOT A

REMAINDER OF MAP 68  
BLOCK 21 LOT 1  
14 ASH ST  
N/F WALTHAM SCHOOL DEPT.  
1.4± ACRES  
BK 5160 PG 485

GRADING AND UTILITY LEGEND

- 99 PROPOSED CONTOUR
- W PROPOSED WATER LINE
- D PROPOSED DRAIN LINE
- + 70.82 PROPOSED SPOT GRADE
- 1 (D.7) PROPOSED CATCH BASIN
- 3 (D.8) PROPOSED WATER SERVICE EQUIPMENT ENCLOSURE
- 3 (D.7) PROPOSED DRAIN MANHOLE

GRADING AND UTILITY NOTES:

1. REFER TO EXISTING CONDITIONS PLAN AND SITE PREP AND DEMOLITION PLAN FOR SURVEY NOTES AND LEGEND. SEE LAYOUT AND MATERIALS PLAN FOR SITE IMPROVEMENTS NOTES.
2. ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF WATER, DRAINAGE AND/OR SEWER SERVICES SHALL BE PERFORMED AND INSPECTED IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF WALTHAM ENGINEERING DEPARTMENT.
3. ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF ELECTRICAL SERVICES SHALL BE PERFORMED AND INSPECTED IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF WALTHAM WIRING DEPARTMENT.
4. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
5. ALL WALKWAYS SHALL MAINTAIN A CROSSPITCH OF NOT MORE THAN 2%.
6. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 10 FEET OF PROPOSED CONTOURS.
7. RESTORE ALL DISTURBED AREAS AND LIMITS OF ALL REMOVALS TO TURF UNLESS OTHERWISE NOTED.

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No.	Description	Date

REVISIONS

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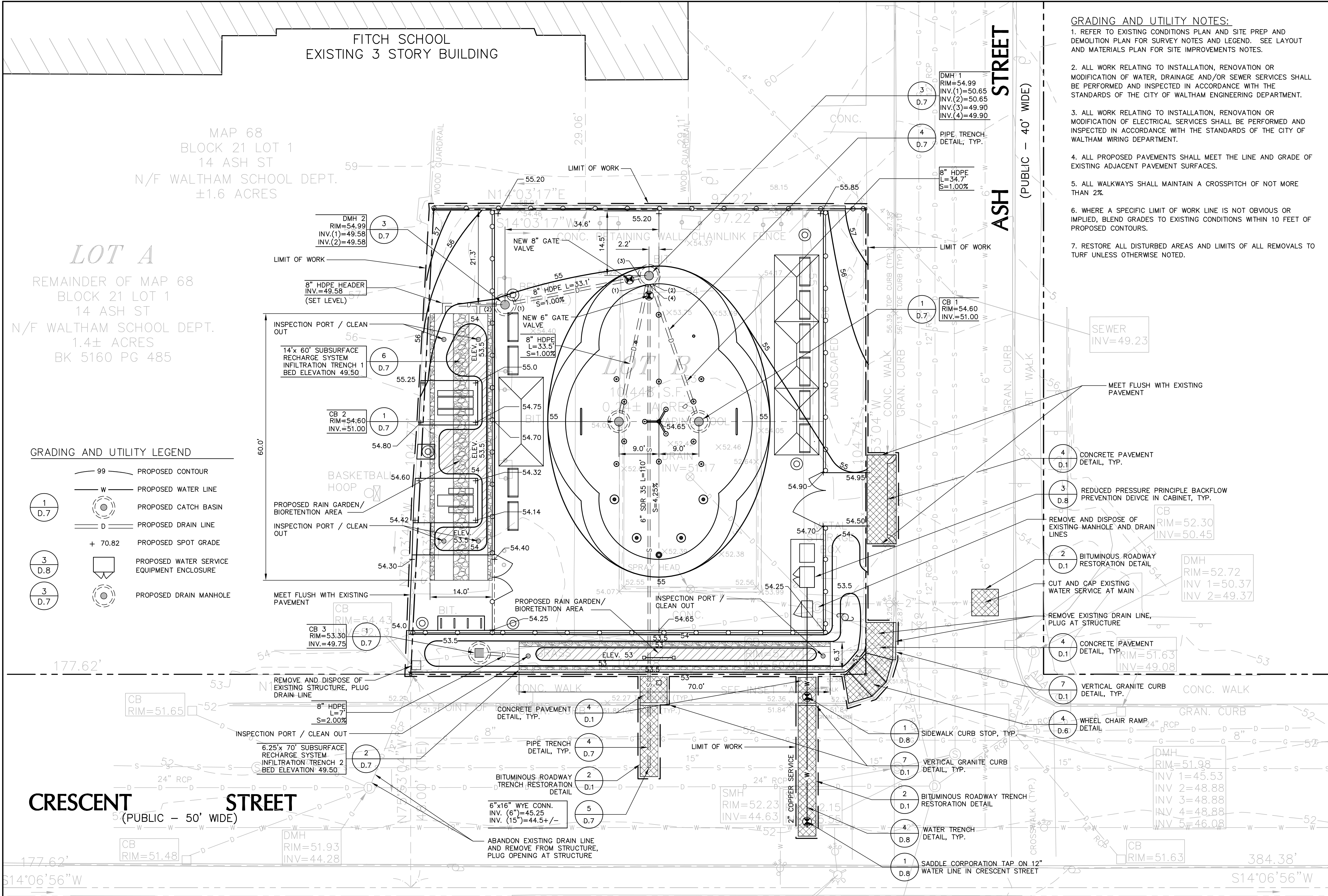
Project:  
**FITCH SPRAY PARK  
14 ASH STREET  
WALTHAM, MA 02453**

Prepared For:  
**WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451**

TITLE:  
**GRADING AND  
DRAINAGE PLAN**

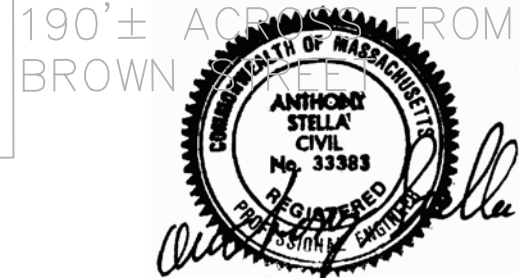
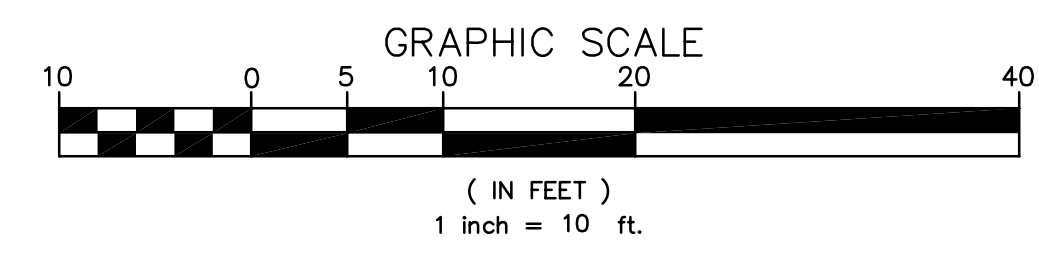
Scale 1"=10' Date MAR 14, 2011  
Drawn By DRB  
Checked By CCC  
Approved By CCC  
Project No. 1021.00

DWG No. **L.4**



BENCHMARK: X-CUT ON  
BONNET BOLT OF FIRE  
HYDRANT  
ELEV=54.01 (NAVD 88)

BENCHMARK: X-CUT ON  
BONNET BOLT OF FIRE  
HYDRANT  
ELEV=54.85 (NAVD 88)



FITCH SCHOOL  
EXISTING 3 STORY BUILDING

MAP 68 POINT OF BEGINNING 'B' CORNER OF  
EXISTING RETAINING WALL  
BLOCK 21 LOT 1  
14 ASH ST  
N/F WALTHAM SCHOOL DEPT.  
±1.6 ACRES

**LOT A**  
REMAINDER OF MAP 68  
BLOCK 21 LOT 1  
14 ASH ST  
N/F WALTHAM SCHOOL DEPT.  
1.4± ACRES  
BK 5160 PG 485

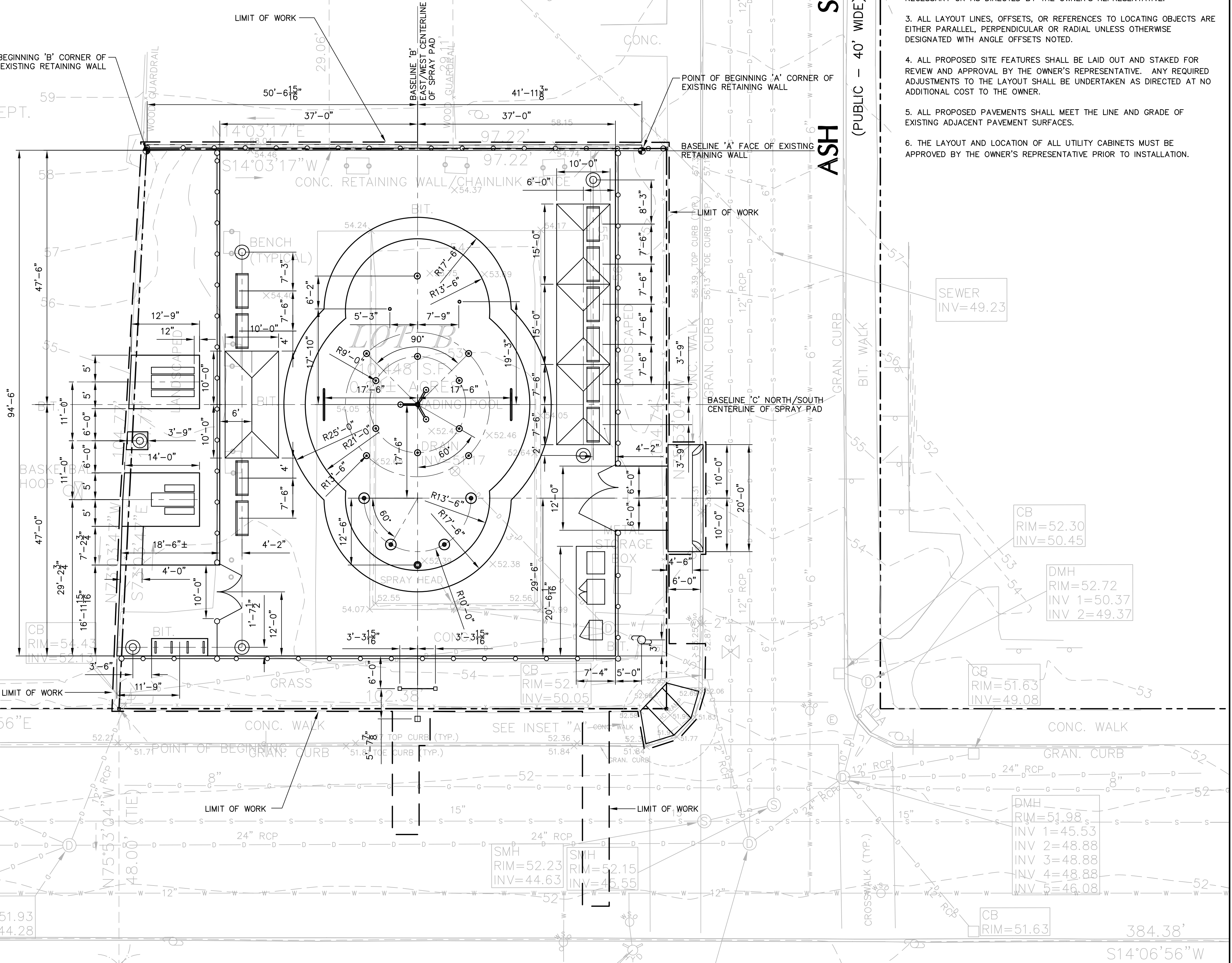
**ASH STREET**  
(PUBLIC - 40' WIDE)

- LAYOUT NOTES:**
1. REFER TO EXISTING CONDITIONS PLAN AND SITE PREP AND DEMOLITION PLAN FOR GENERAL NOTES AND SURVEY LEGEND. SEE GRADING AND UTILITIES PLAN FOR UTILITIES LEGEND.
  2. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
  3. ALL LAYOUT LINES, OFFSETS, OR REFERENCES TO LOCATING OBJECTS ARE EITHER PARALLEL, PERPENDICULAR OR RADIAL UNLESS OTHERWISE DESIGNATED WITH ANGLE OFFSETS NOTED.
  4. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED AT NO ADDITIONAL COST TO THE OWNER.
  5. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
  6. THE LAYOUT AND LOCATION OF ALL UTILITY CABINETS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

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No.	Description	Date

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Project:  
**FITCH SPRAY PARK  
14 ASH STREET  
WALTHAM, MA 02453**

Prepared For:  
**WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451**

TITLE:  
**LAYOUT  
PLAN**

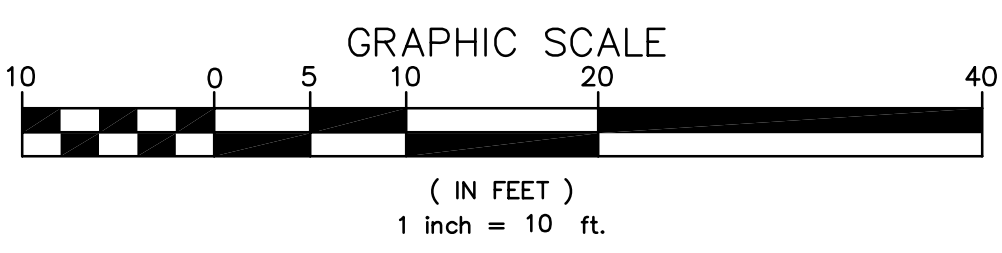
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Drawn By DRB  
Checked By CCC  
Approved By CCC  
Project No. 1021.00

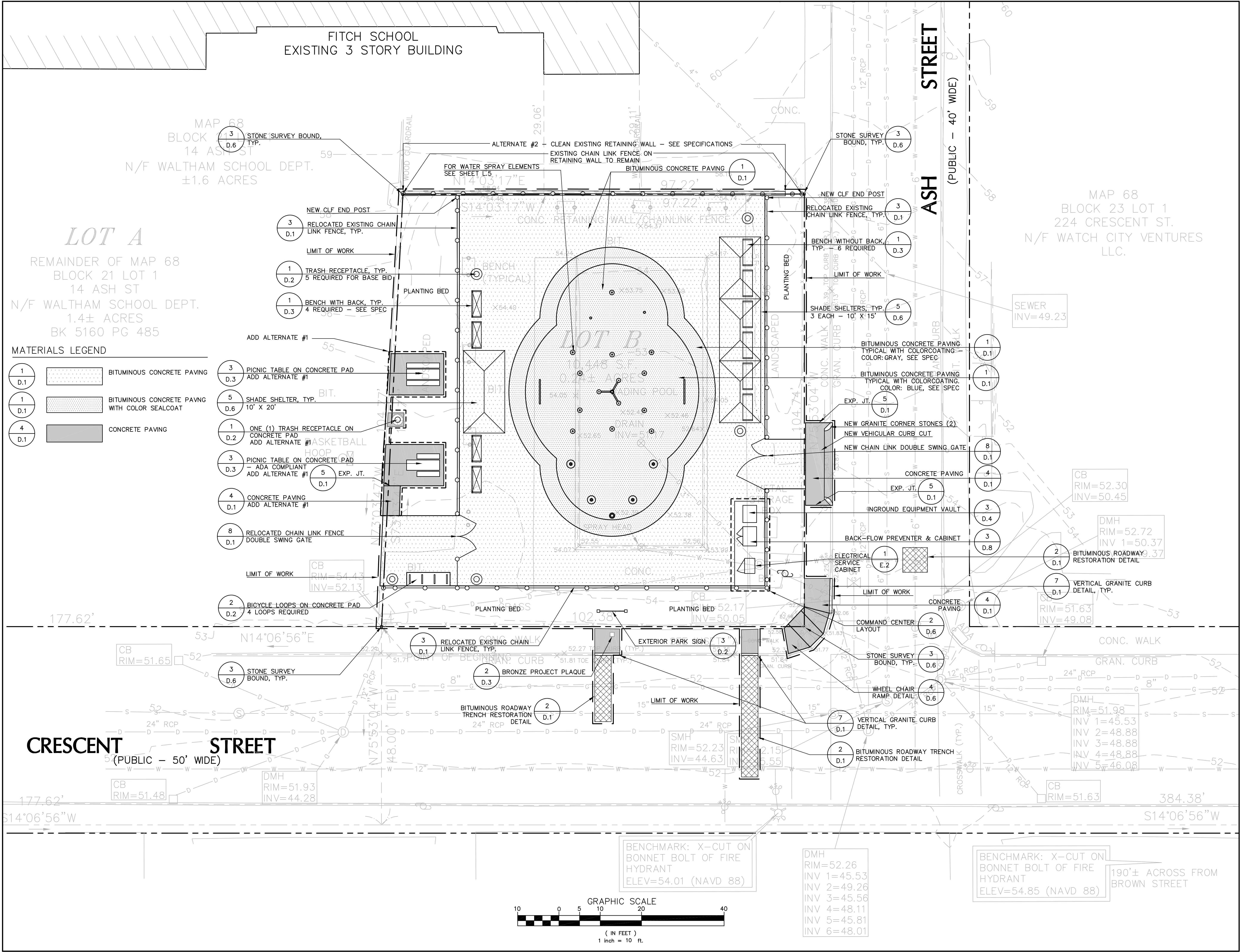
DWG No. **L3**

BENCHMARK: X-CUT ON  
BONNET BOLT OF FIRE  
HYDRANT  
ELEV=54.01 (NAVD 88)

DMH  
RIM=52.26  
INV 1=45.53  
INV 2=49.26  
INV 3=45.56  
INV 4=48.11  
INV 5=45.81  
INV 6=48.01

BENCHMARK: X-CUT ON  
BONNET BOLT OF FIRE  
HYDRANT  
ELEV=54.85 (NAVD 88)  
190'± ACROSS FROM  
BROWN STREET





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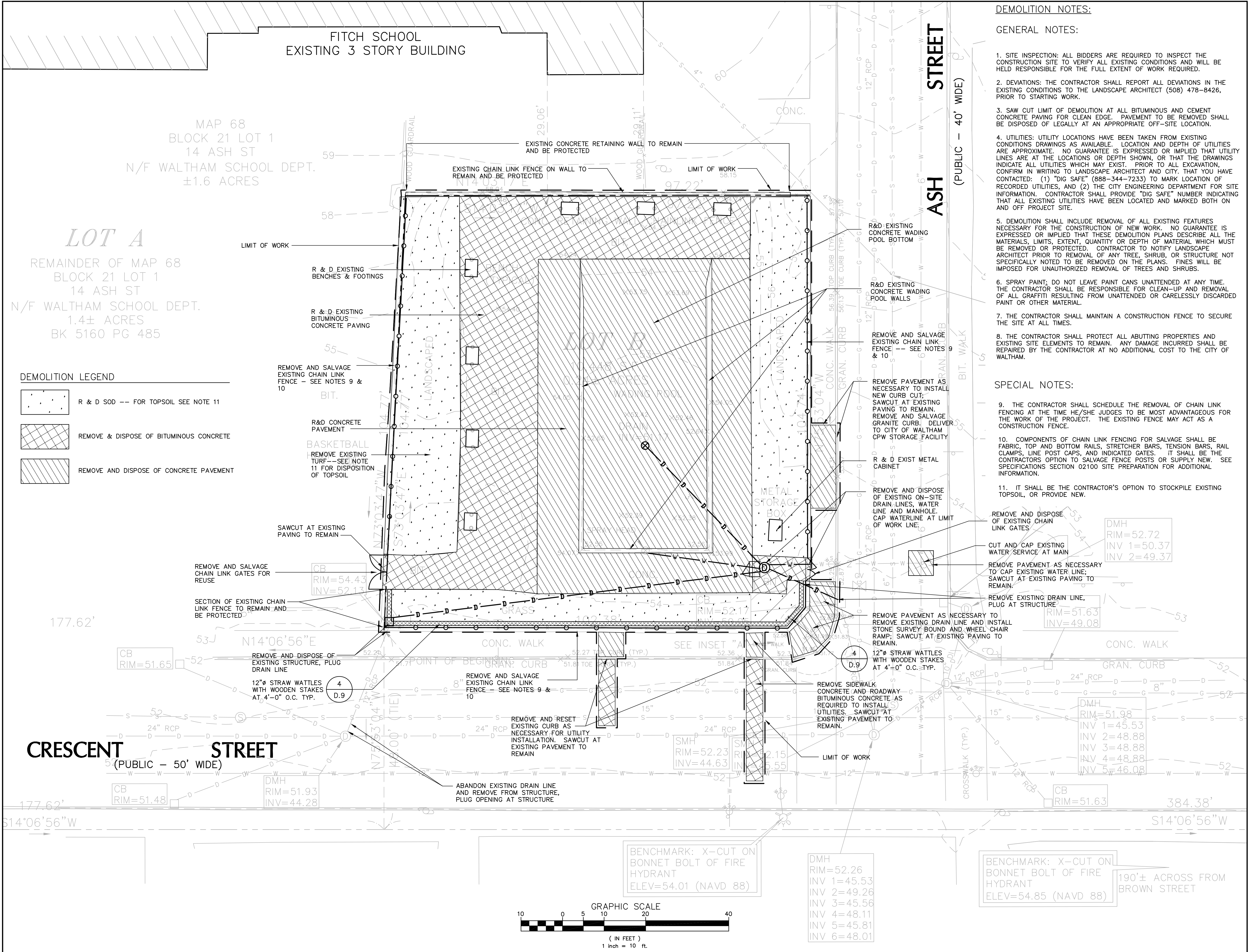
Project:  
**FITCH SPRAY PARK**  
14 ASH STREET  
WALTHAM, MA 02453

Prepared For:  
**WALTHAM PLANNING DEPARTMENT**  
119 SCHOOL STREET  
WALTHAM, MA 02451

TITLE:  
**MATERIALS PLAN**

Scale 1"=10' Date MAR 14, 2011  
Drawn By CCC  
Checked By DRB  
Approved By CCC  
Project No. 1021.00

DWG No. **L.2**



DEMOLITION NOTES:

GENERAL NOTES:

1. SITE INSPECTION: ALL BIDDERS ARE REQUIRED TO INSPECT THE CONSTRUCTION SITE TO VERIFY ALL EXISTING CONDITIONS AND WILL BE HELD RESPONSIBLE FOR THE FULL EXTENT OF WORK REQUIRED.
2. DEVIATIONS: THE CONTRACTOR SHALL REPORT ALL DEVIATIONS IN THE EXISTING CONDITIONS TO THE LANDSCAPE ARCHITECT (508) 478-8426, PRIOR TO STARTING WORK.
3. SAW CUT LIMIT OF DEMOLITION AT ALL BITUMINOUS AND CEMENT CONCRETE PAVING FOR CLEAN EDGE. PAVEMENT TO BE REMOVED SHALL BE DISPOSED OF LEGALLY AT AN APPROPRIATE OFF-SITE LOCATION.
4. UTILITIES: UTILITY LOCATIONS HAVE BEEN TAKEN FROM EXISTING CONDITIONS DRAWINGS AS AVAILABLE. LOCATION AND DEPTH OF UTILITIES ARE APPROXIMATE. NO GUARANTEE IS EXPRESSED OR IMPLIED THAT UTILITY LINES ARE AT THE LOCATIONS OR DEPTH SHOWN, OR THAT THE DRAWINGS INDICATE ALL UTILITIES WHICH MAY EXIST. PRIOR TO ALL EXCAVATION, CONFIRM IN WRITING TO LANDSCAPE ARCHITECT AND CITY, THAT YOU HAVE CONTACTED: (1) "DIG SAFE" (888-344-7233) TO MARK LOCATION OF RECORDED UTILITIES, AND (2) THE CITY ENGINEERING DEPARTMENT FOR SITE INFORMATION. CONTRACTOR SHALL PROVIDE "DIG SAFE" NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED BOTH ON AND OFF PROJECT SITE.
5. DEMOLITION SHALL INCLUDE REMOVAL OF ALL EXISTING FEATURES NECESSARY FOR THE CONSTRUCTION OF NEW WORK. NO GUARANTEE IS EXPRESSED OR IMPLIED THAT THESE DEMOLITION PLANS DESCRIBE ALL THE MATERIALS, LIMITS, EXTENT, QUANTITY OR DEPTH OF MATERIAL WHICH MUST BE REMOVED OR PROTECTED. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT PRIOR TO REMOVAL OF ANY TREE, SHRUB, OR STRUCTURE NOT SPECIFICALLY NOTED TO BE REMOVED ON THE PLANS. FINES WILL BE IMPOSED FOR UNAUTHORIZED REMOVAL OF TREES AND SHRUBS.
6. SPRAY PAINT: DO NOT LEAVE PAINT CANS UNATTENDED AT ANY TIME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP AND REMOVAL OF ALL GRAFFITI RESULTING FROM UNATTENDED OR CARELESSLY DISCARDED PAINT OR OTHER MATERIAL.
7. THE CONTRACTOR SHALL MAINTAIN A CONSTRUCTION FENCE TO SECURE THE SITE AT ALL TIMES.
8. THE CONTRACTOR SHALL PROTECT ALL ABUTTING PROPERTIES AND EXISTING SITE ELEMENTS TO REMAIN. ANY DAMAGE INCURRED SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY OF WALTHAM.

SPECIAL NOTES:

9. THE CONTRACTOR SHALL SCHEDULE THE REMOVAL OF CHAIN LINK FENCING AT THE TIME HE/SHE JUDGES TO BE MOST ADVANTAGEOUS FOR THE WORK OF THE PROJECT. THE EXISTING FENCE MAY ACT AS A CONSTRUCTION FENCE.
10. COMPONENTS OF CHAIN LINK FENCING FOR SALVAGE SHALL BE FABRIC, TOP AND BOTTOM RAILS, STRETCHER BARS, TENSION BARS, RAIL CLAMPS, LINE POST CAPS, AND INDICATED GATES. IT SHALL BE THE CONTRACTORS OPTION TO SALVAGE FENCE POSTS OR SUPPLY NEW. SEE SPECIFICATIONS SECTION 02100 SITE PREPARATION FOR ADDITIONAL INFORMATION.
11. IT SHALL BE THE CONTRACTOR'S OPTION TO STOCKPILE EXISTING TOPSOIL, OR PROVIDE NEW.

DEMOLITION LEGEND

- R & D SOD --- FOR TOPSOIL SEE NOTE 11
- REMOVE & DISPOSE OF BITUMINOUS CONCRETE
- REMOVE AND DISPOSE OF CONCRETE PAVEMENT

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No.	Description	Date

REVISIONS

Project:  
**FITCH SPRAY PARK  
 14 ASH STREET  
 WALTHAM, MA 02453**

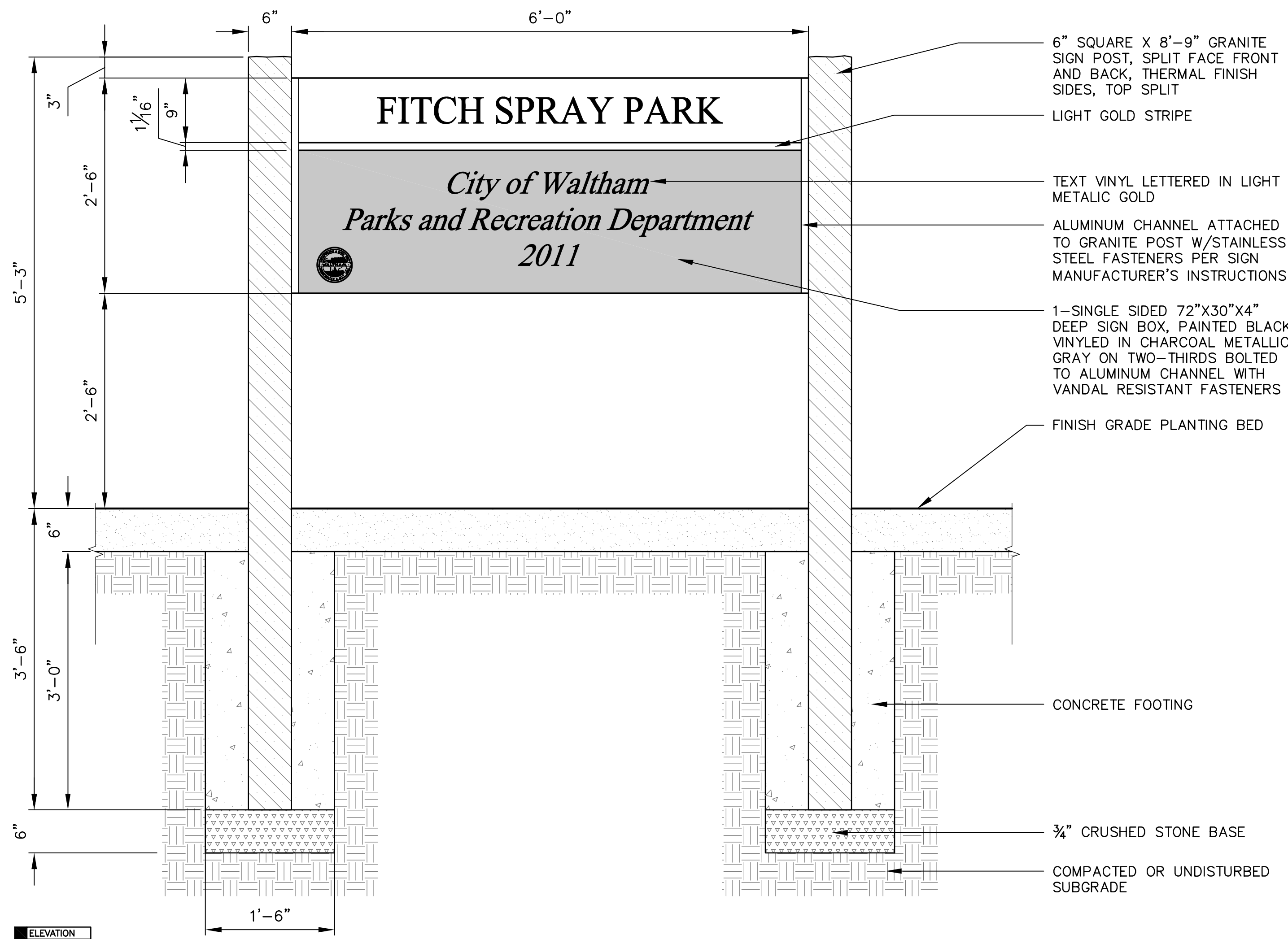
Prepared For:  
**WALTHAM PLANNING  
 DEPARTMENT  
 119 SCHOOL STREET  
 WALTHAM, MA 02451**

TITLE:  
**SITE PREPARATION &  
 DEMOLITION PLAN**

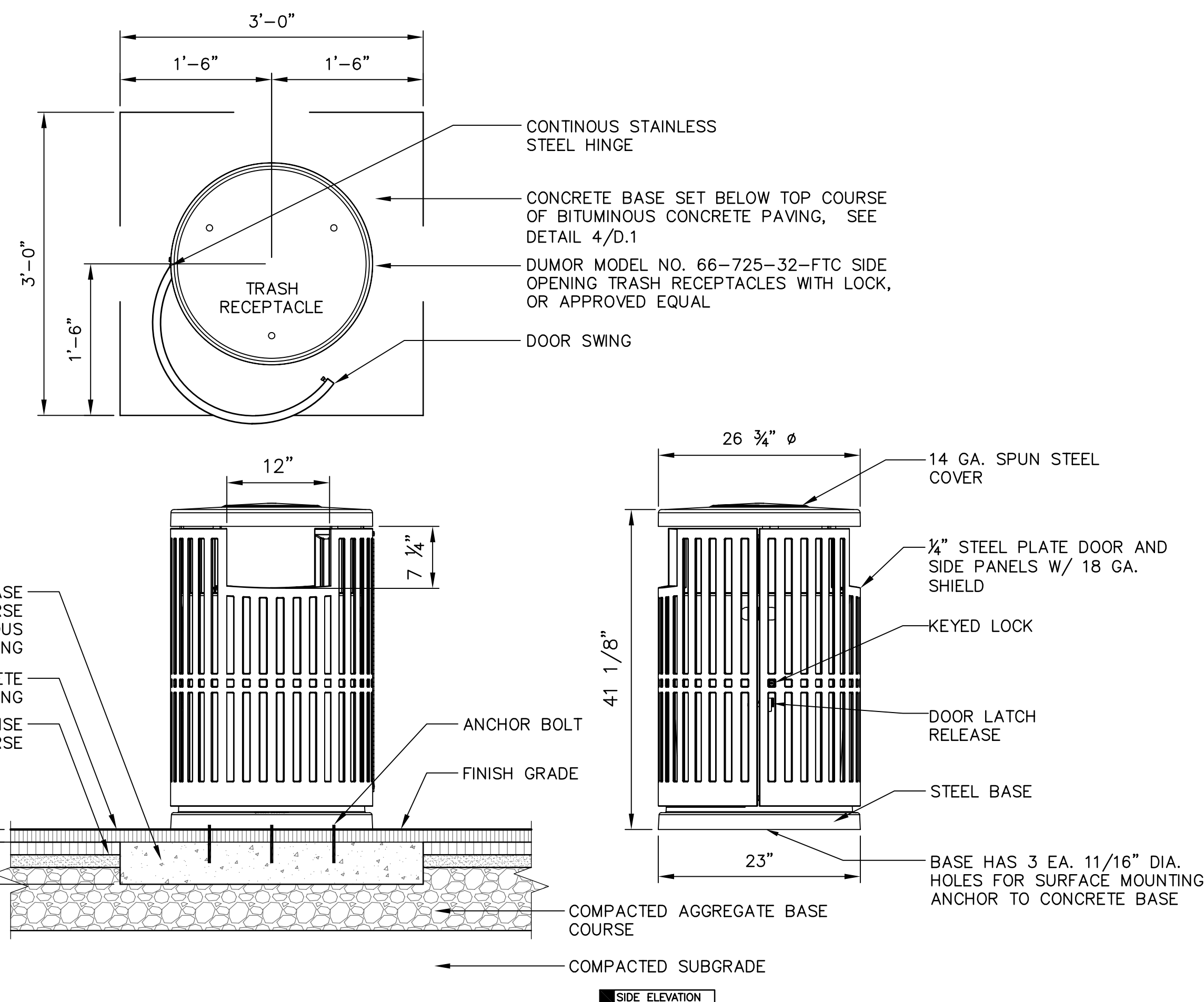
Scale 1"=10' Date MAR 14, 2011  
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 Checked By DRB  
 Approved By CCC  
 Project No. 1021.00

DWG No. **L.1**

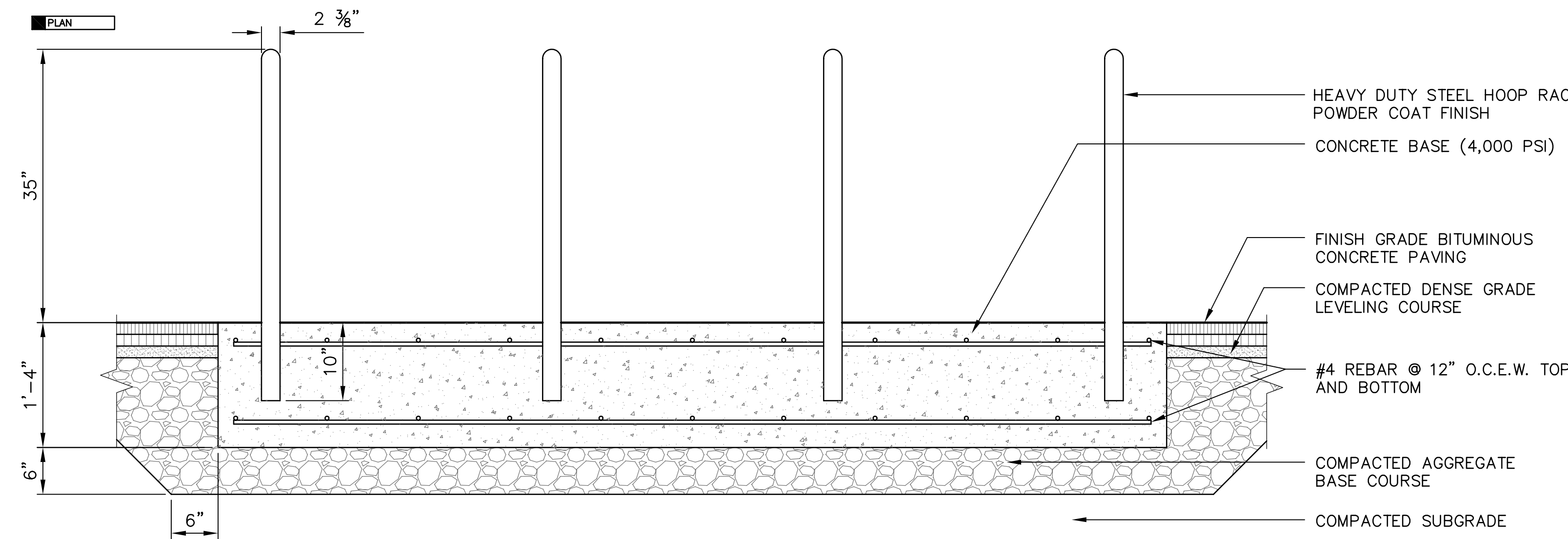
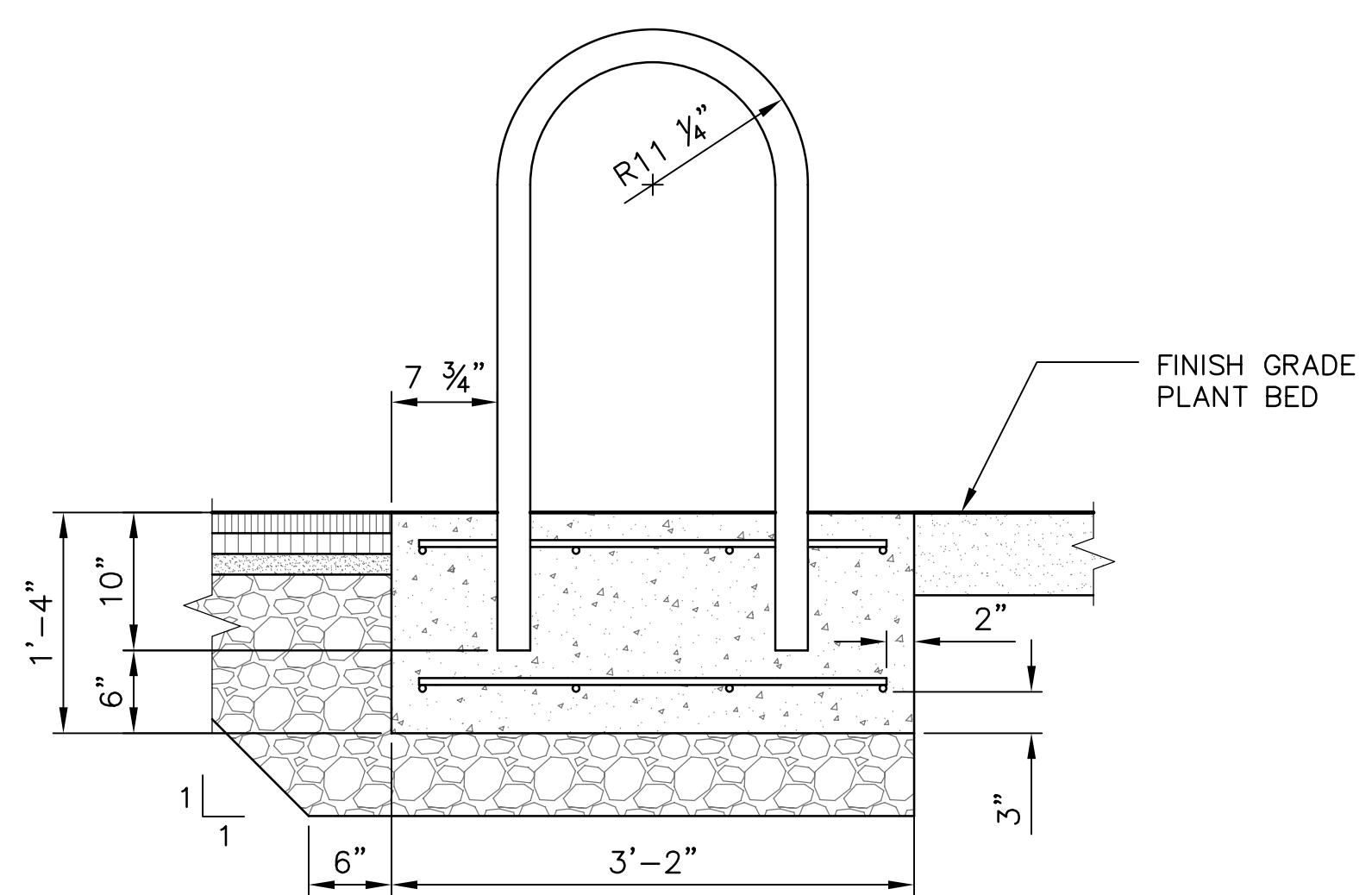
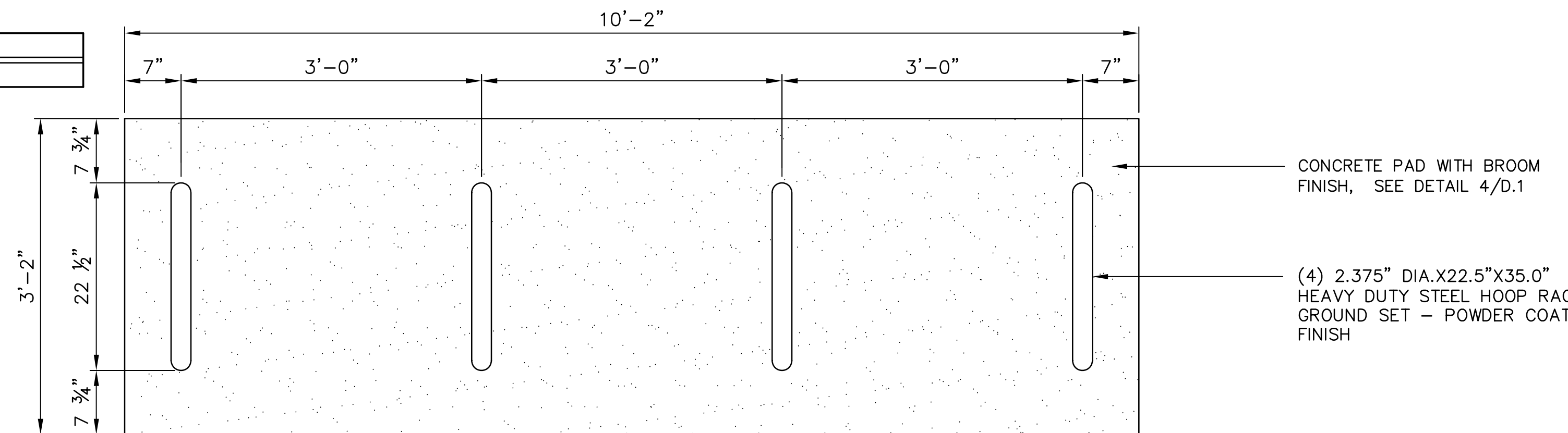




**3** EXTERIOR PARK SIGN AND FOOTING DETAIL  
SCALE: 1" = 1'-0"



**1** TRASH RECEPTACLE DETAIL, TYP.  
SCALE: 1" = 1'-0"



**2** BIKE LOOP - INGROUND INSTALLATION DETAIL  
SCALE: 1" = 1'-0"

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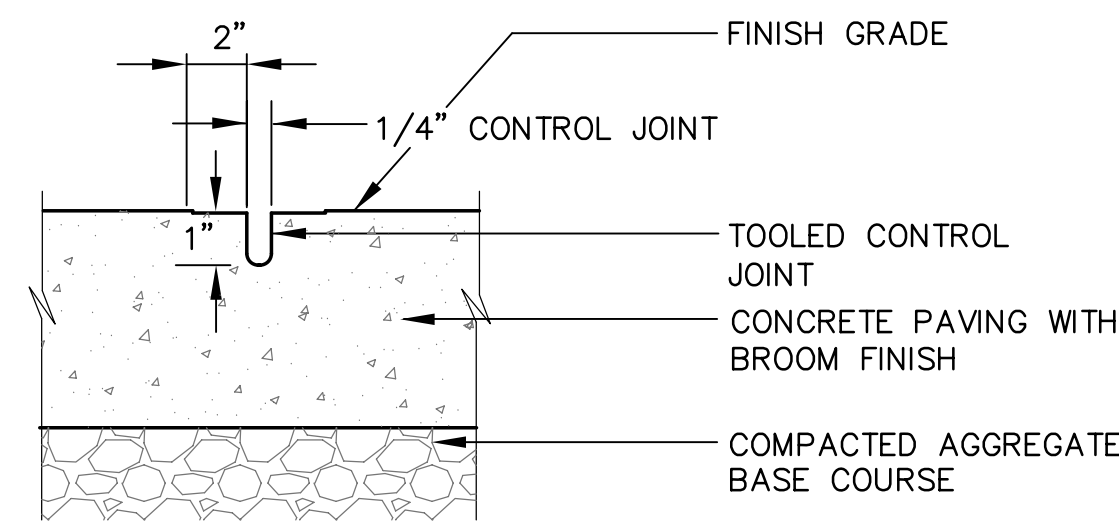
Project:  
**FITCH SPRAY PARK  
14 ASH STREET  
WALTHAM, MA 02453**

Prepared For:  
**WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451**

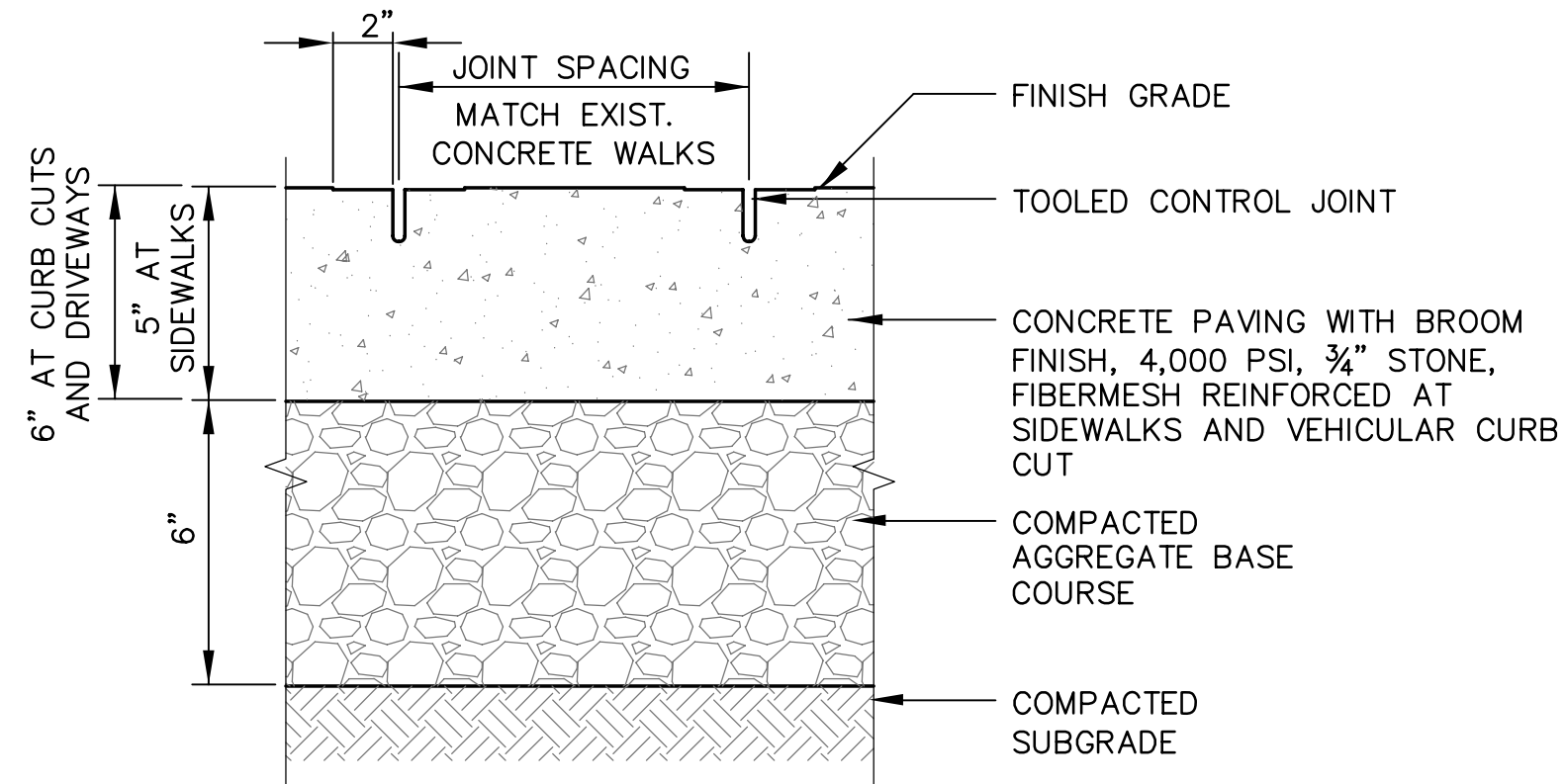
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**DETAILS**

Scale AS NOTED Date MAR 14, 2011  
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Checked By CCC  
Approved By CCC  
Project No. 1021.00

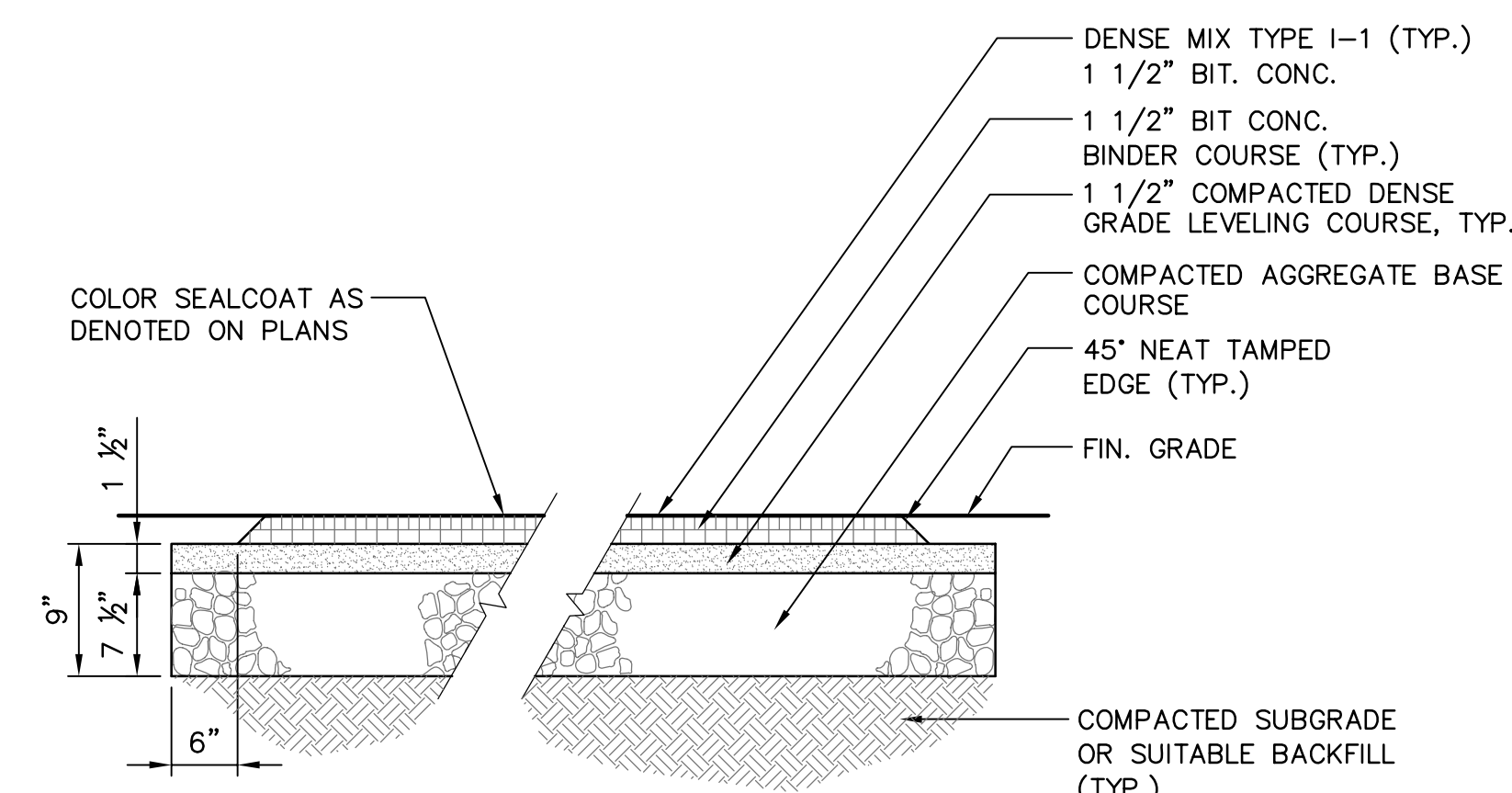
DWG No. **D.2**



**SECTION**  
**6** CONCRETE PAVEMENT CONTROL JOINT DETAIL, TYP.  
 N.T.S.

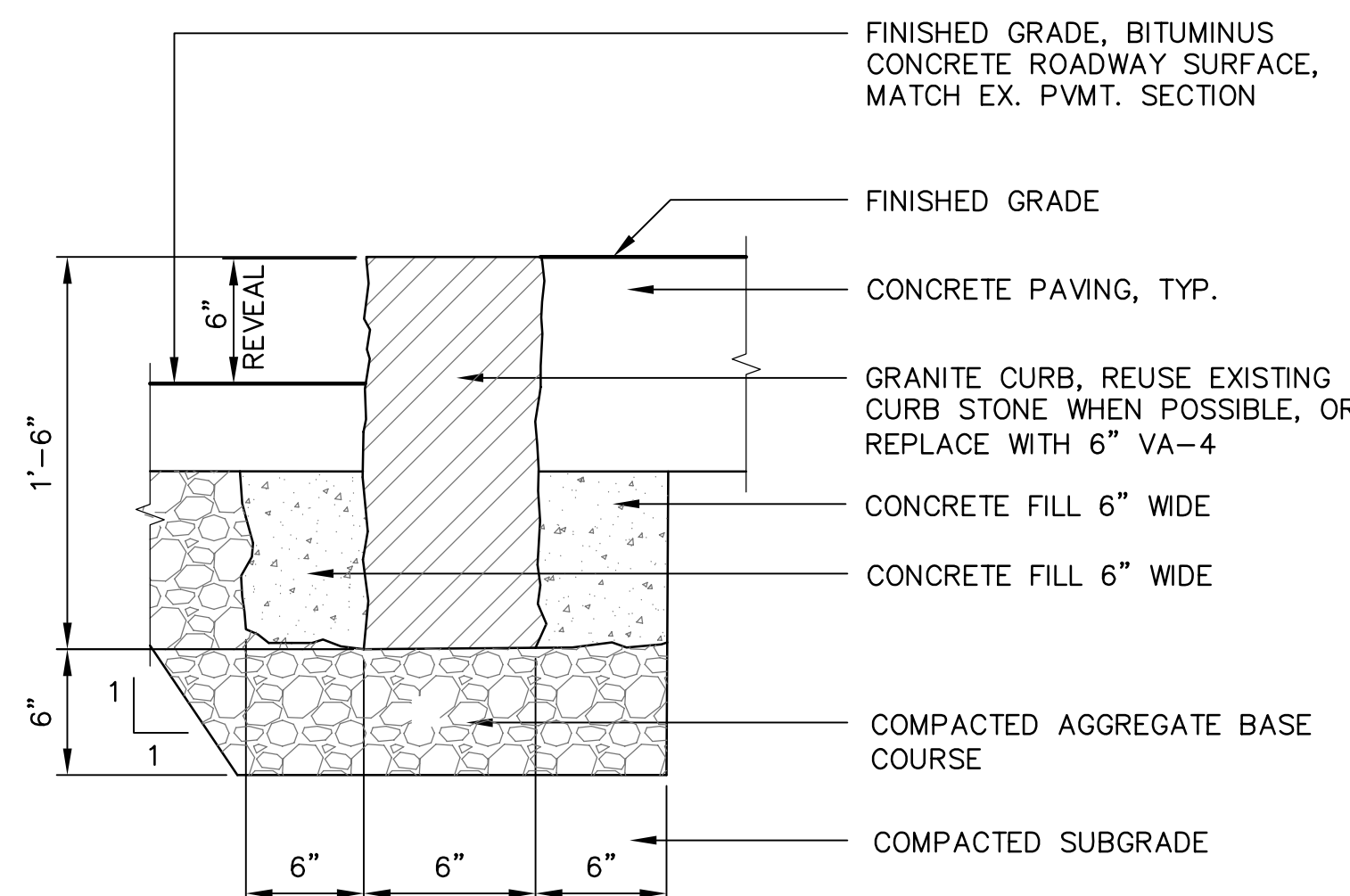


**SECTION**  
**4** CONCRETE PAVEMENT DETAIL, TYP.  
 N.T.S.

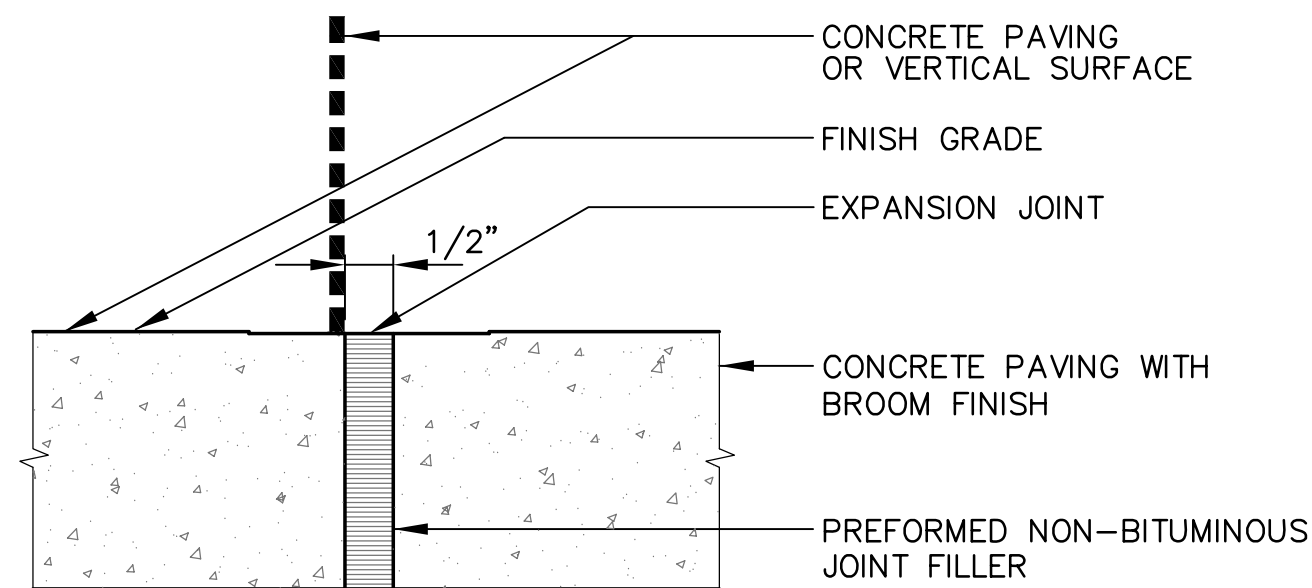


**SECTION**  
**1** BITUMINOUS CONCRETE PAVEMENT DETAIL  
 N.T.S.

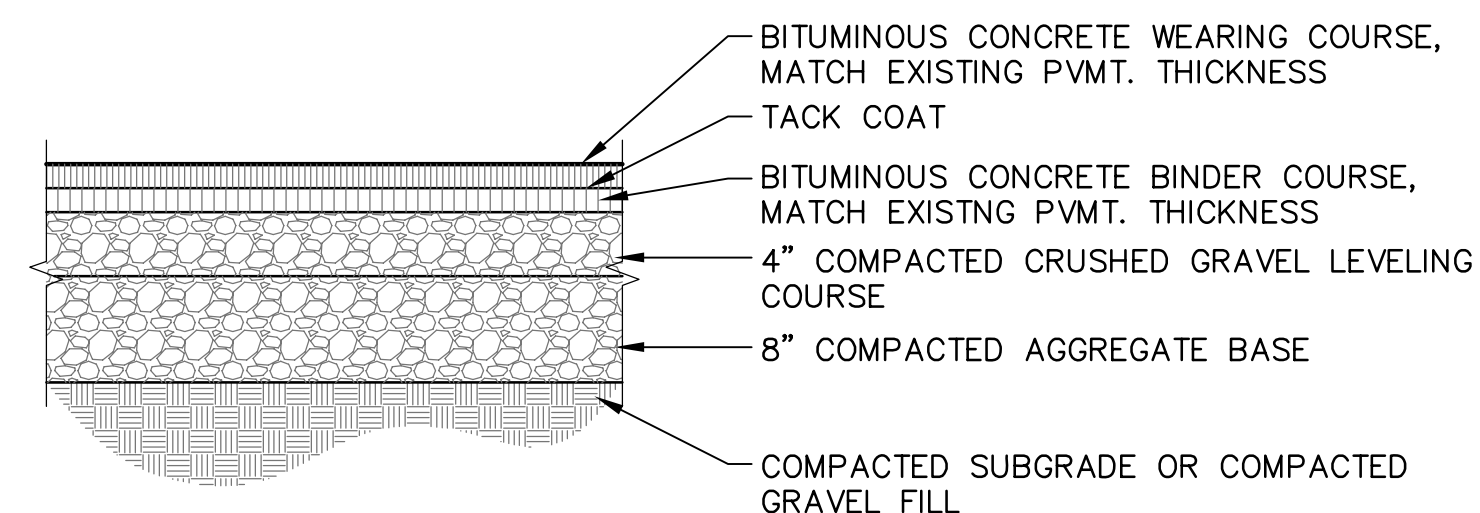
NOTE:  
 WHERE EXISTING PAVEMENT ABUTS, SAW CUT AND REMOVE 12" OF PVMT. FOR INSTALLATION OF GRANITE CURB, PATCH PVMT. TO MATCH EXISTING.



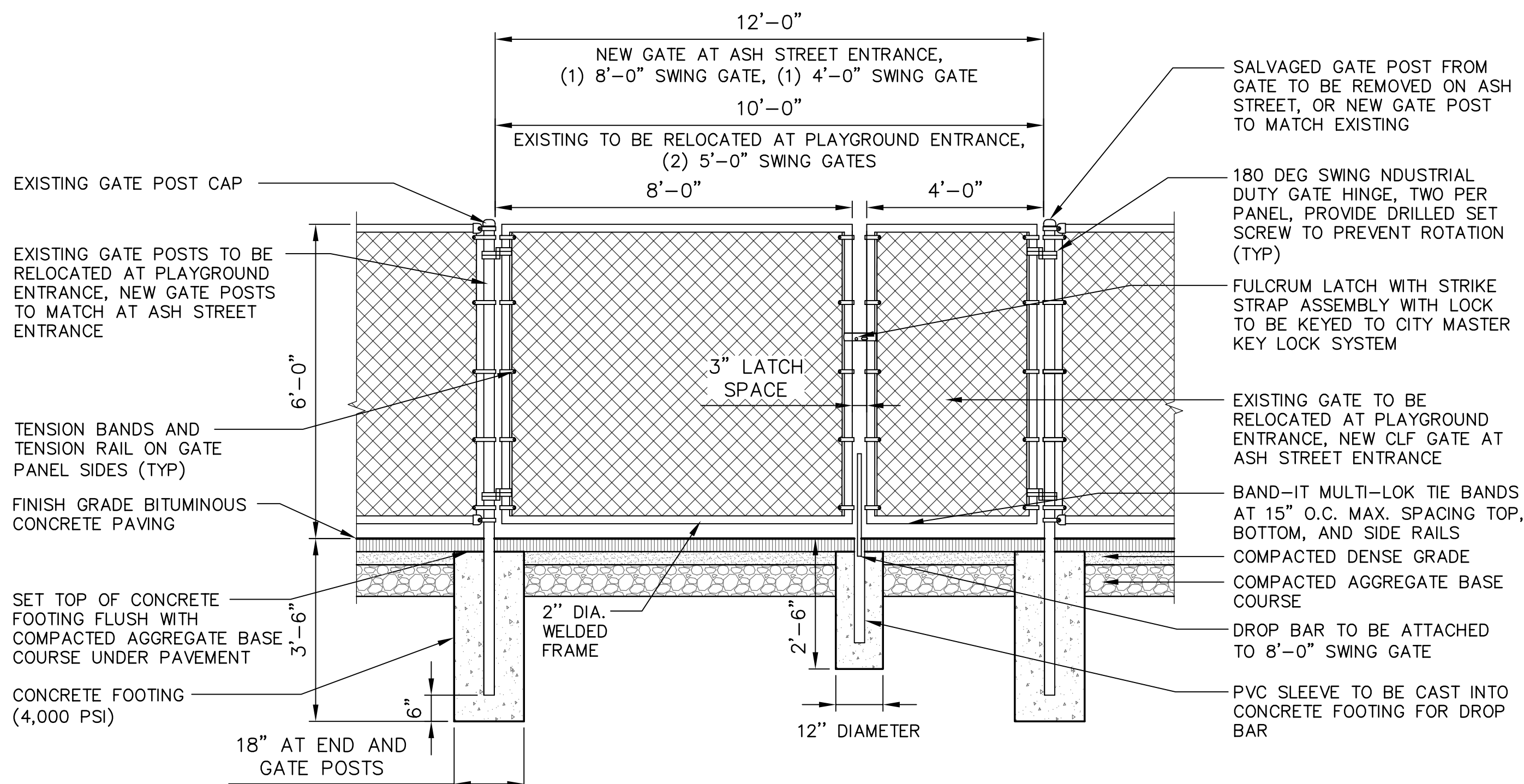
**SECTION**  
**7** VERTICAL GRANITE CURB DETAIL, TYP.  
 N.T.S.



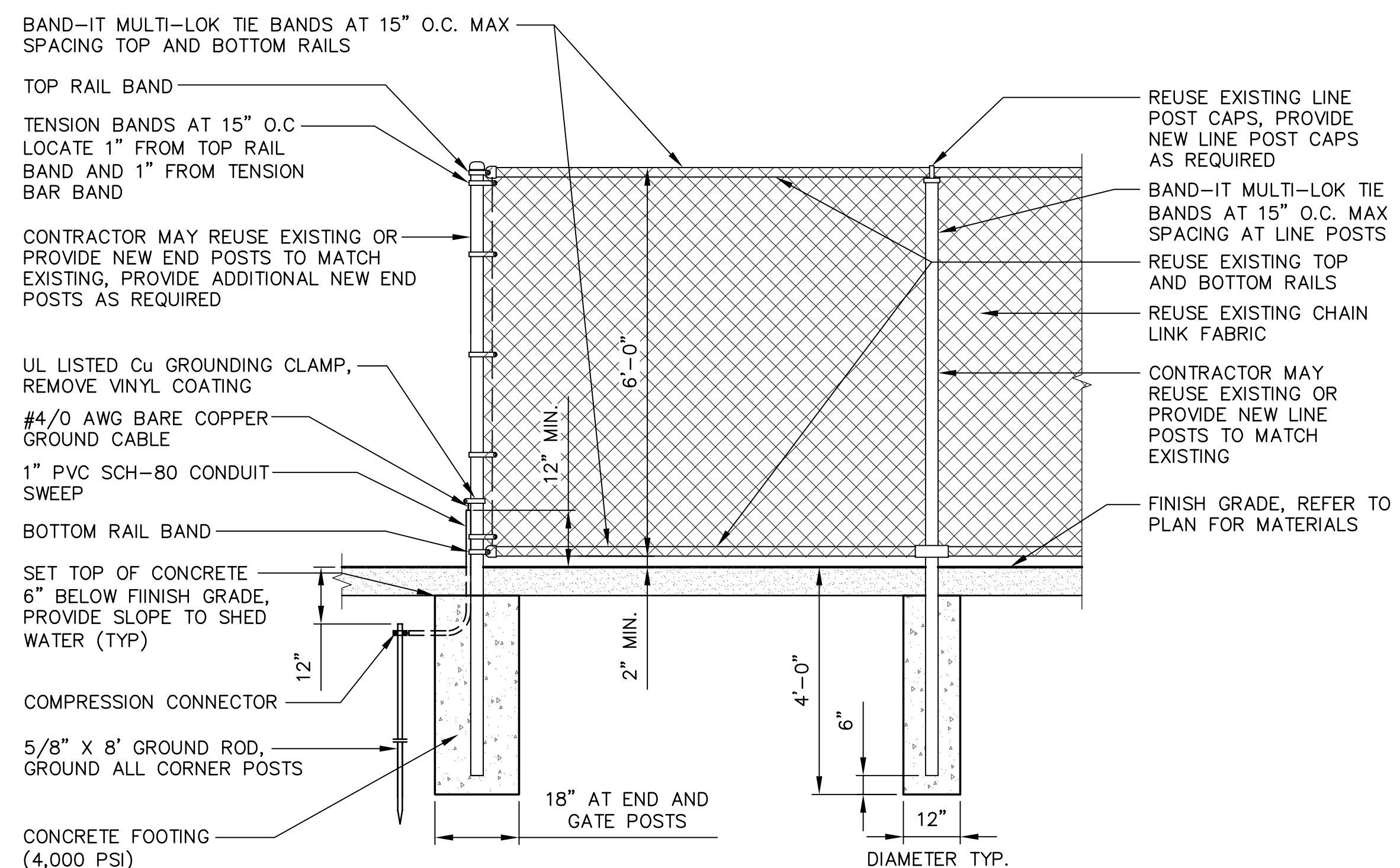
**SECTION**  
**5** CONCRETE PAVEMENT EXPANSION JOINT DETAIL, TYP.  
 N.T.S.



**SECTION**  
**2** BITUMINOUS ROADWAY TRENCH RESTORATION DETAIL, TYP.  
 N.T.S.



**ELEVATION**  
**8** CHAIN LINK FENCE DOUBLE SWING GATE DETAIL, TYP. (ONE EXISTING TO BE RELOCATD, ONE NEW TO MATCH EXISTING)  
 N.T.S.



**ELEVATION**  
**3** RELOCATED EXISTING CHAIN LINK FENCE DETAIL, TYP.  
 N.T.S.

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No.	Description	Date

REVISIONS



Project:

**FITCH SPRAY PARK  
 14 ASH STREET  
 WALTHAM, MA 02453**

Prepared For:

**WALTHAM PLANNING  
 DEPARTMENT  
 119 SCHOOL STREET  
 WALTHAM, MA 02451**

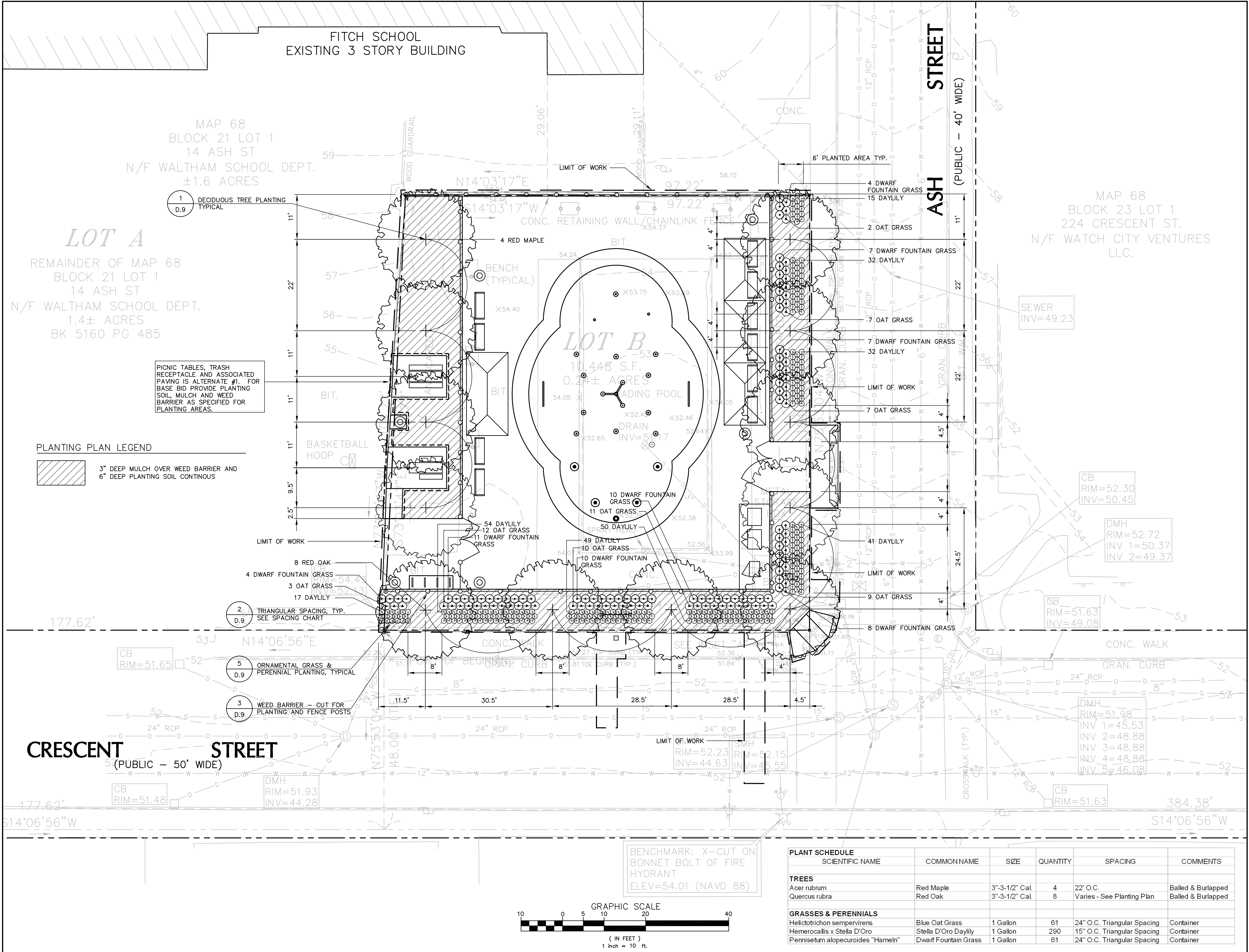
TITLE:

**DETAILS**

Scale AS NOTED Date MAR 14, 2011  
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 Checked By CCC  
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 Project No. 1021.00

DWG No.

**D.1**



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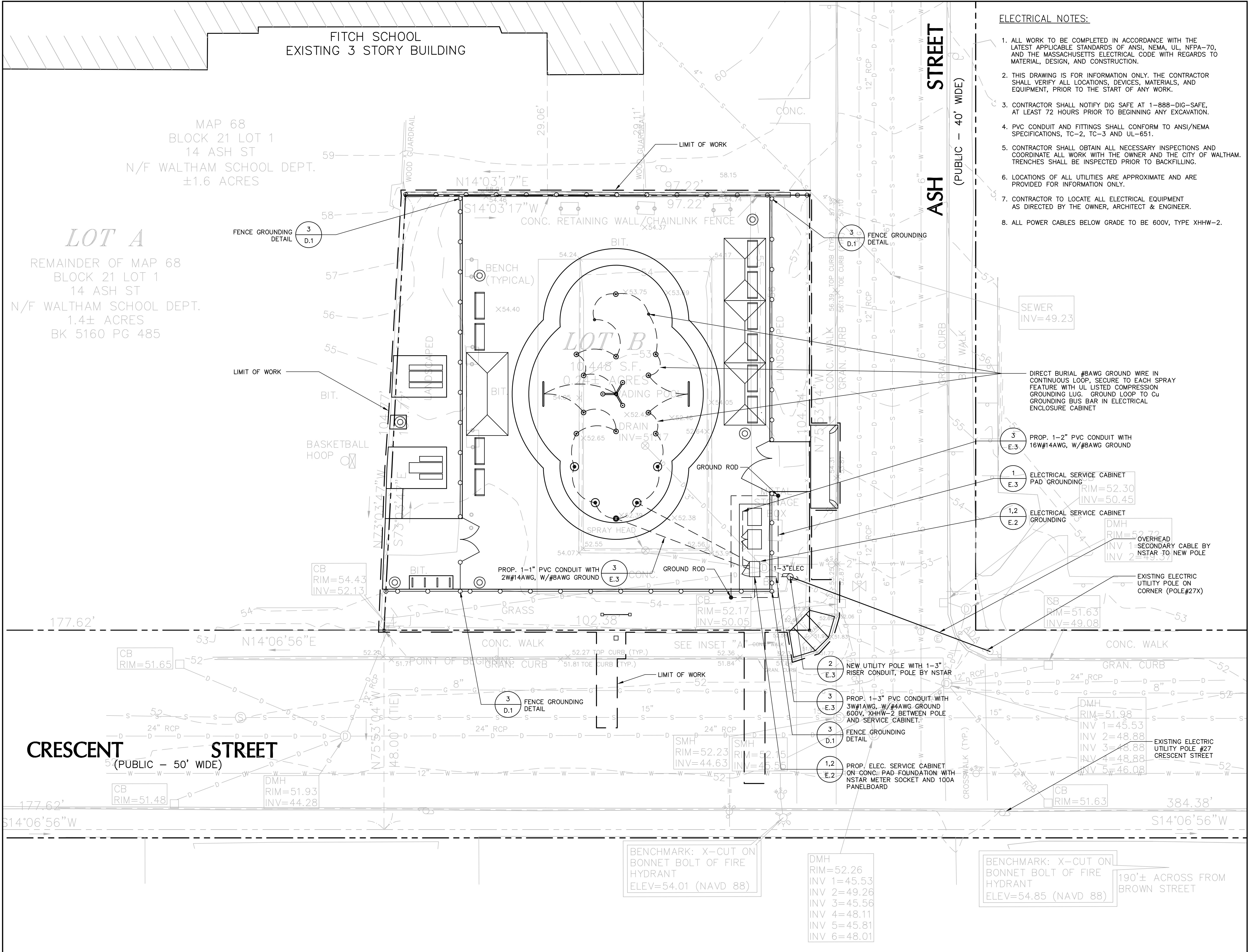
Prepared For:  
**WALTHAM PLANNING DEPARTMENT**  
119 SCHOOL STREET  
WALTHAM, MA 02451

TITLE:  
**PLANTING PLAN**

Scale 1"=10' Date MAR 14, 2011  
Drawn By DRB  
Checked By CCC  
Approved By CCC  
Project No. 1021.00

DWG No. **L.6**





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North

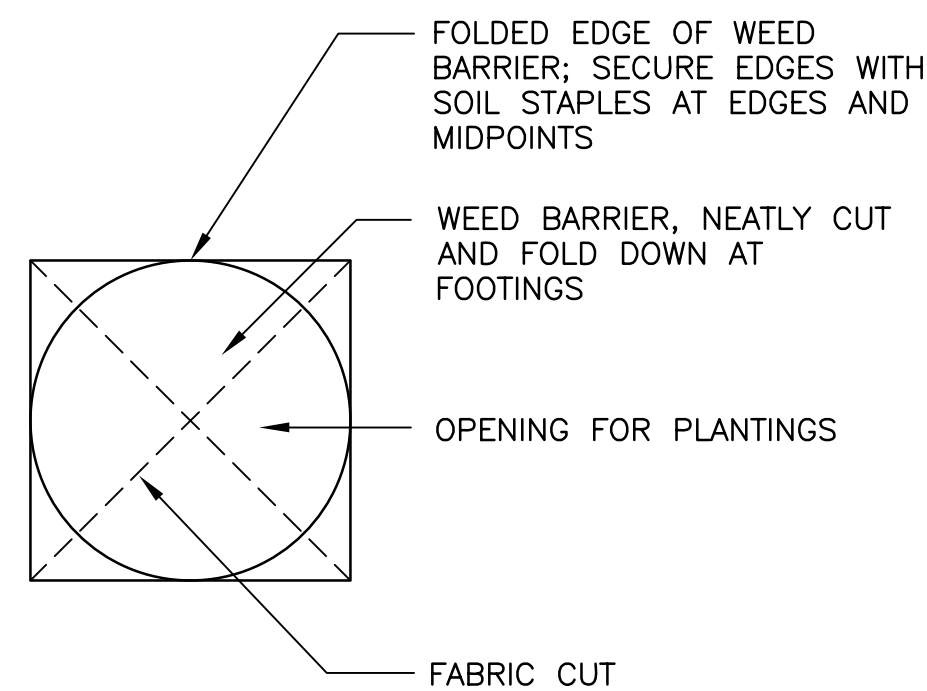
**Project:**  
FITCH SPRAY PARK  
14 ASH STREET  
WALTHAM, MA 02453

**Prepared For:**  
WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451

**TITLE:**  
GROUNDING AND  
ELECTRICAL PLAN

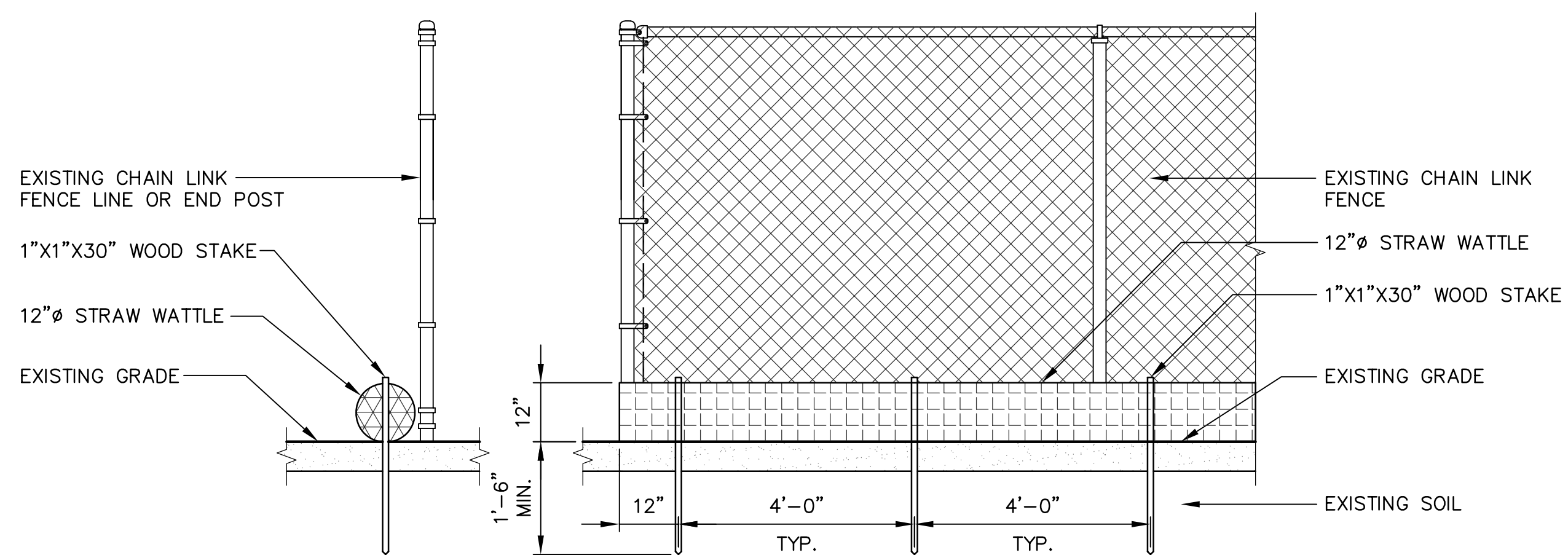
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**Drawn By:** DRB  
**Checked By:** CCC  
**Approved By:** CCC  
**Project No.:** 1021.00

**DWG No.:** E.1



PLAN

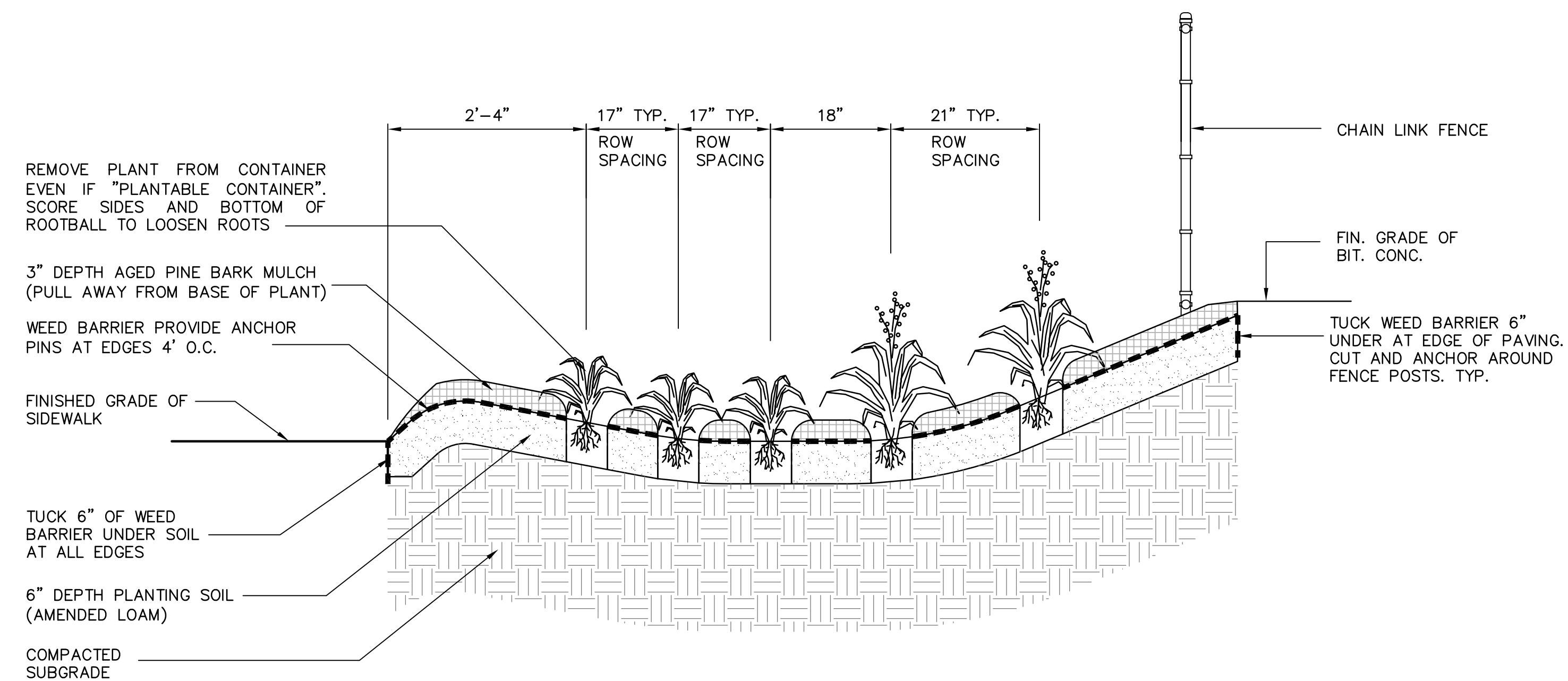
**3 WEED BARRIER CUT AT PLANTINGS OR FENCE POST DETAIL, TYP.**  
SCALE: NOT TO SCALE



SECTION

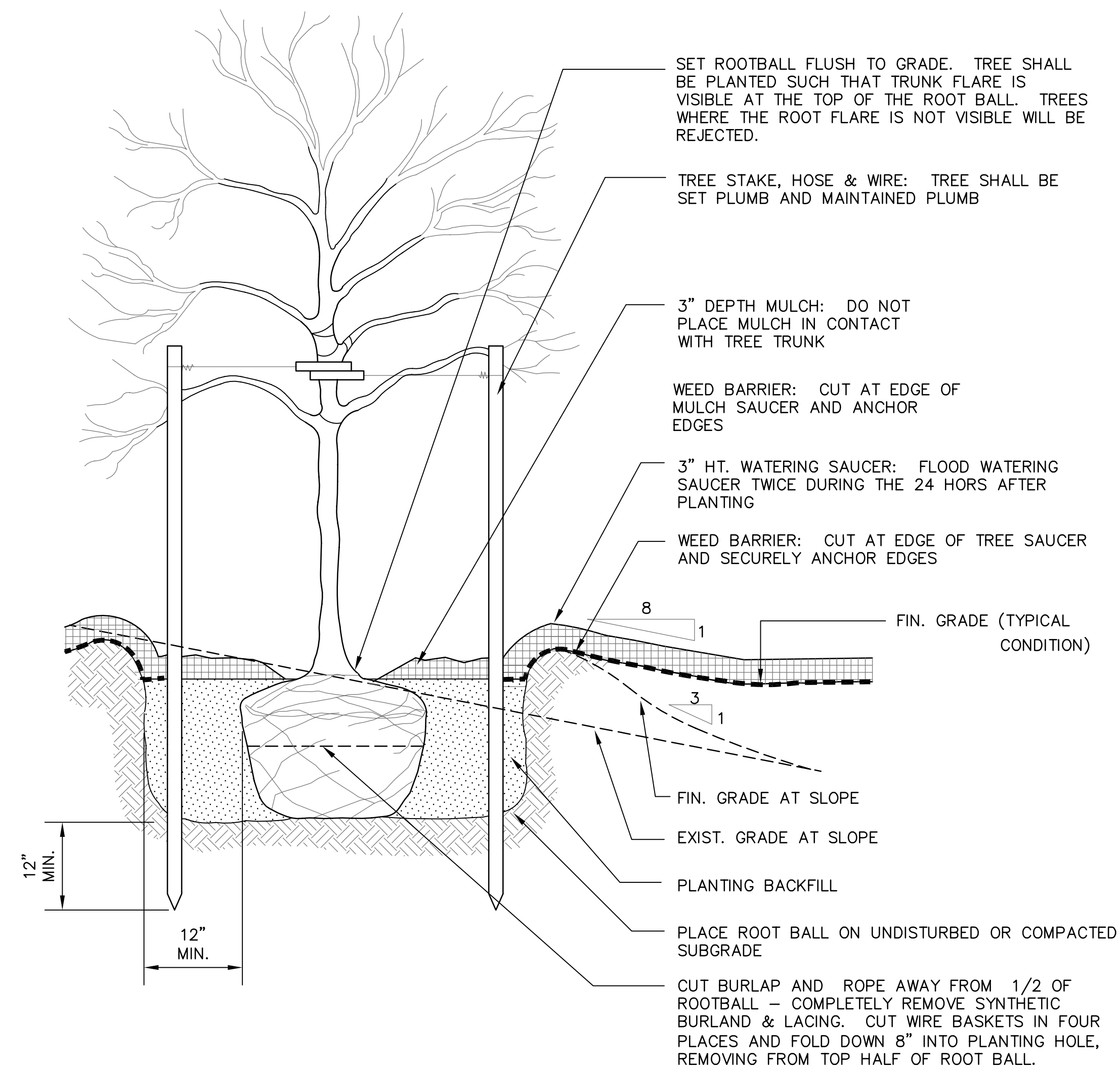
ELEVATION

**4 STRAW WATTLE DETAIL**  
SCALE: NOT TO SCALE



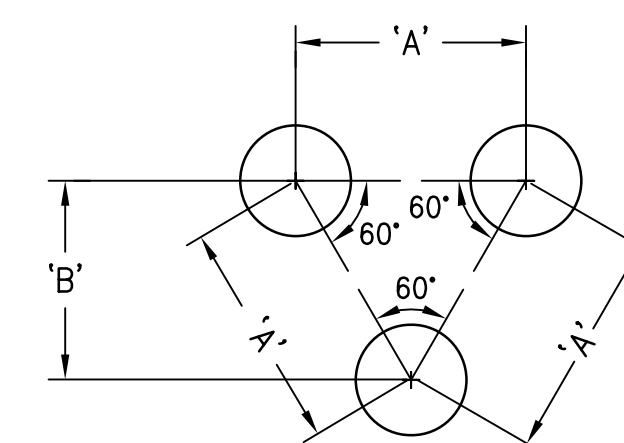
SECTION

**5 ORNAMENTAL GRASS & PERENNIAL PLANTING DETAIL**  
SCALE: NOT TO SCALE



SECTION

**1 DECIDUOUS TREE PLANTING DETAIL**  
SCALE: NOT TO SCALE

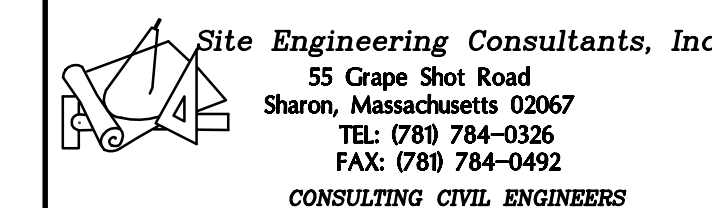


PLANT SPACING ('A')	ROW SPACING ('B')
15 IN. O.C.	13 IN.
24 IN. O.C.	21 IN.

**2 SPACING CHART**  
SCALE: NOT TO SCALE

**Carolyn Cooney & Associates**

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Electrical Engineering, Power, Lighting,  
Technical Studies and Utility Consulting

No.	Description	Date

REVISIONS



Project:

**FITCH SPRAY PARK  
14 ASH STREET  
WALTHAM, MA 02453**

Prepared For:

**WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451**

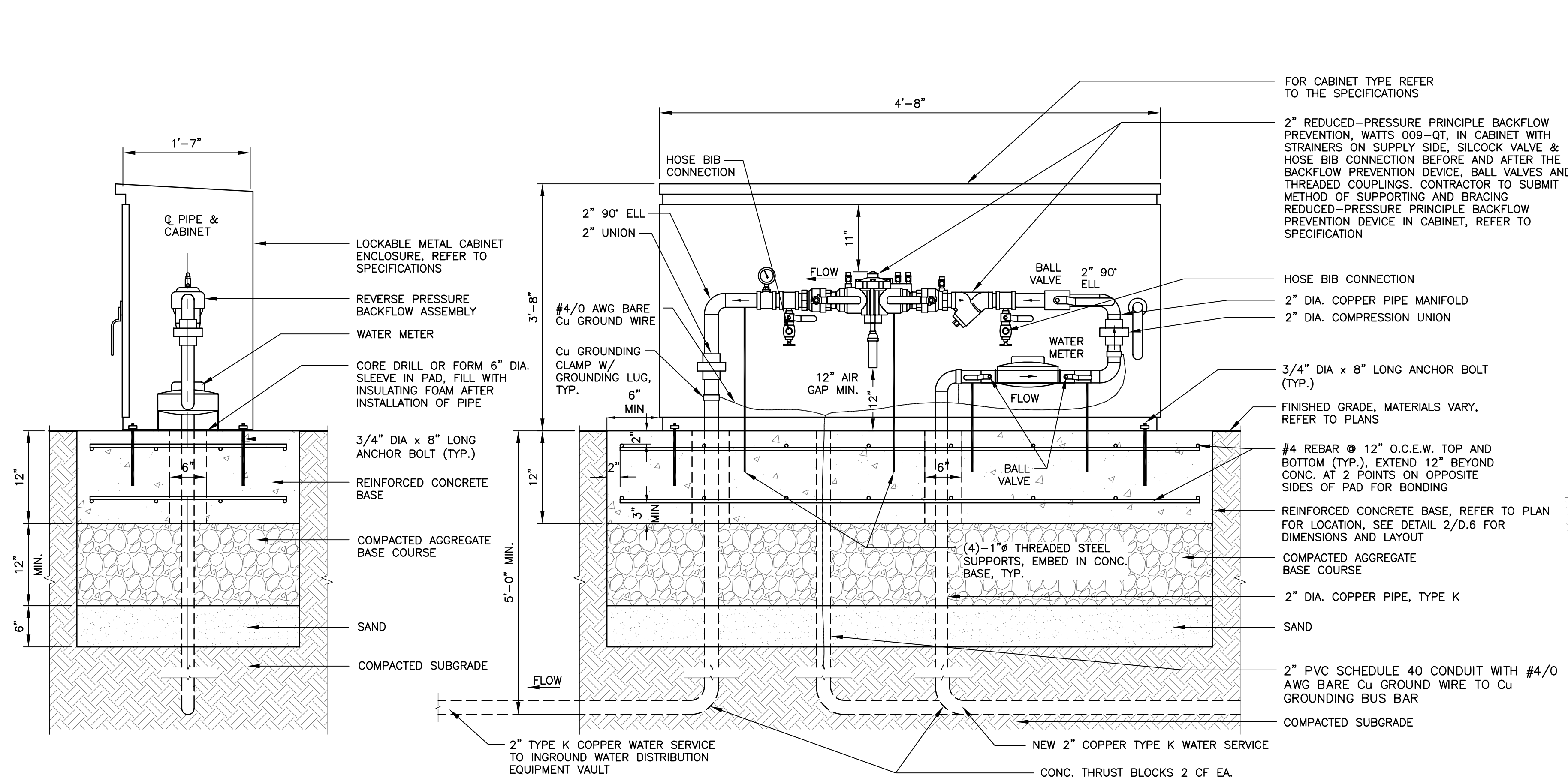
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**PLANTING DETAILS**

Scale AS NOTED Date MAR 14, 2011  
Drawn By DRB  
Checked By CCC  
Approved By CCC  
Project No. 1021.00

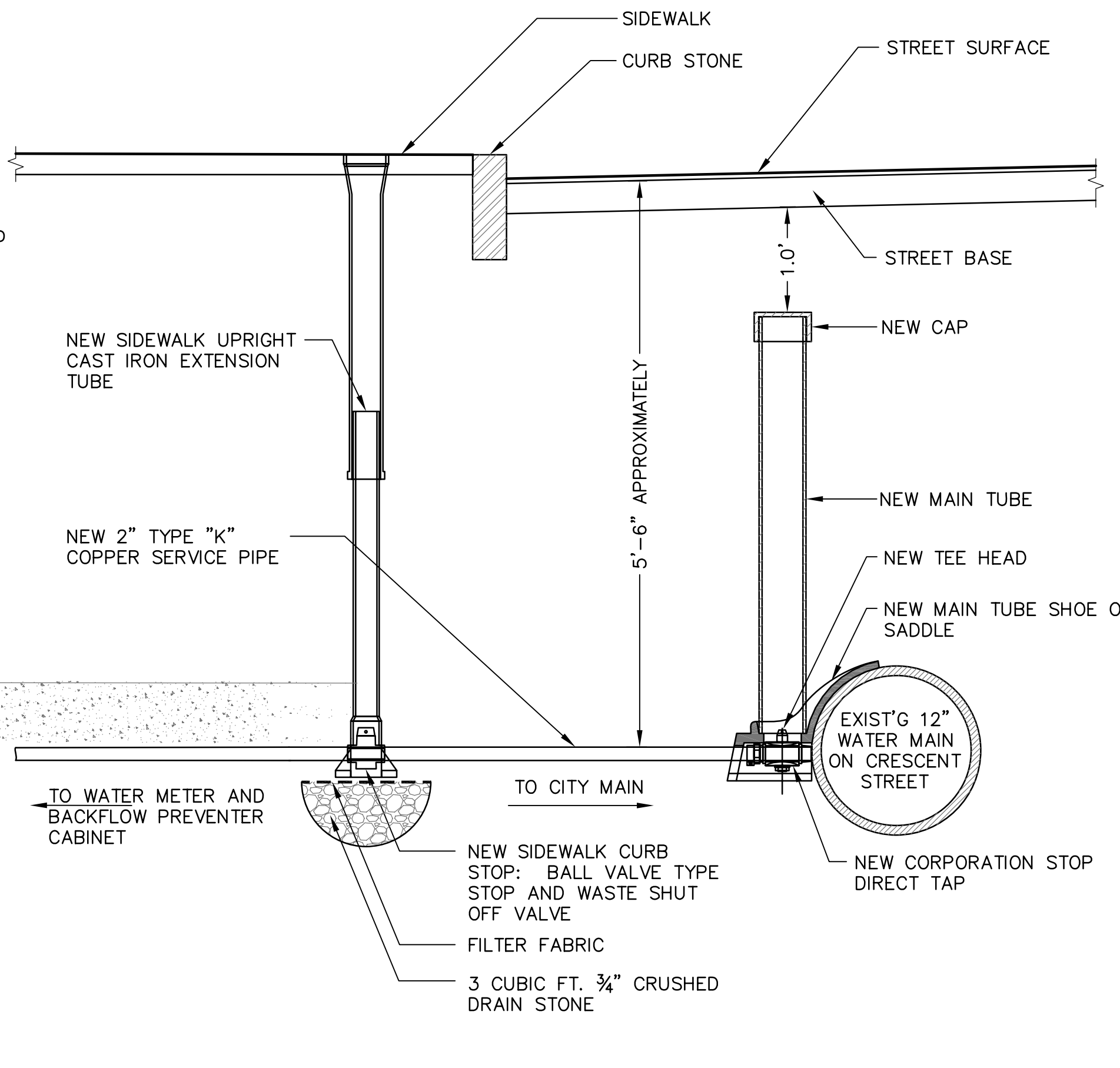
DWG No.

**D.9**



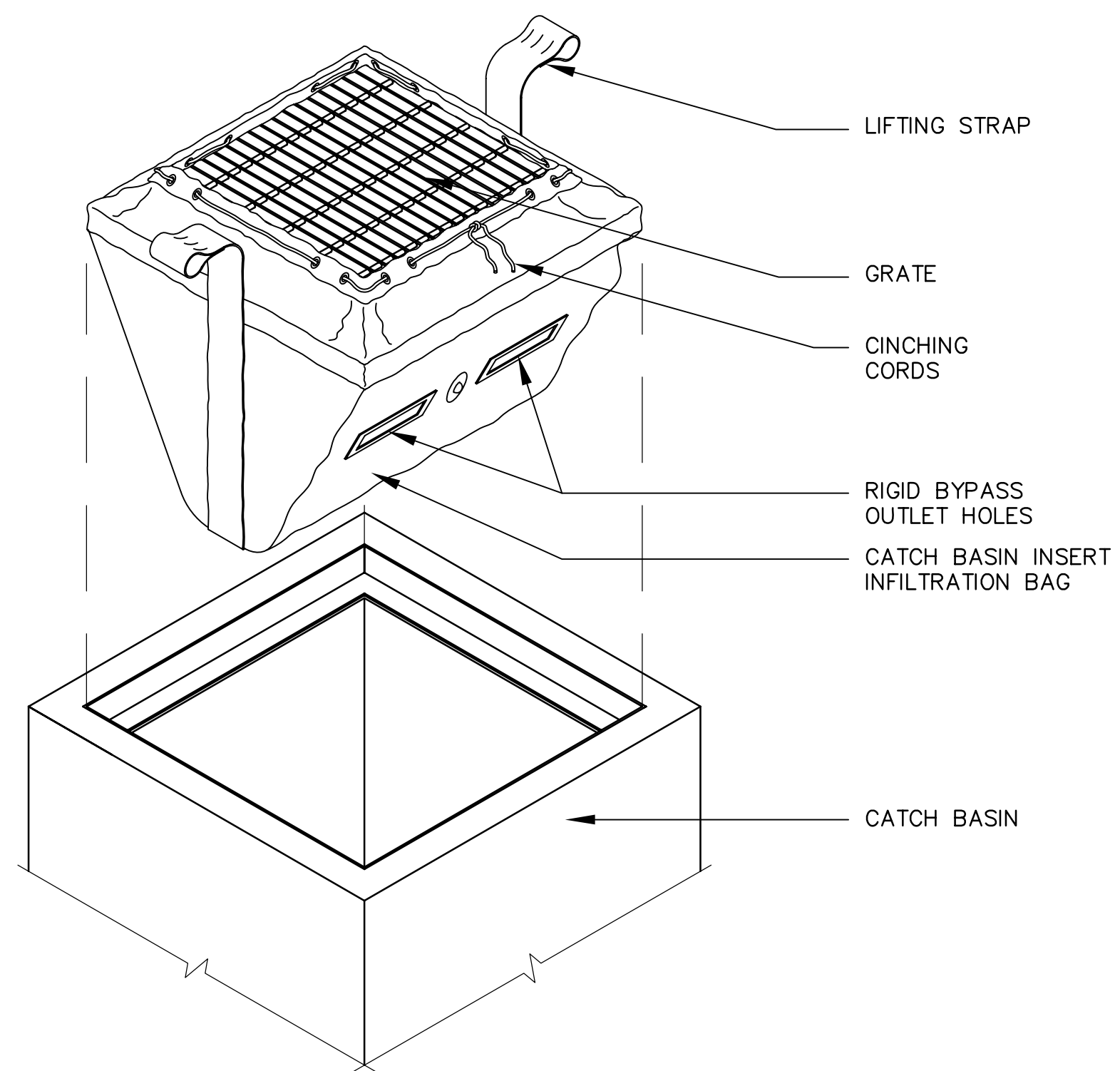
ELEVATION

**3** REDUCED-PRESSURE PRINCIPLE BACKFLOW-PREVENTION DEVICE IN CABINET DETAIL, TYP.  
N.T.S.



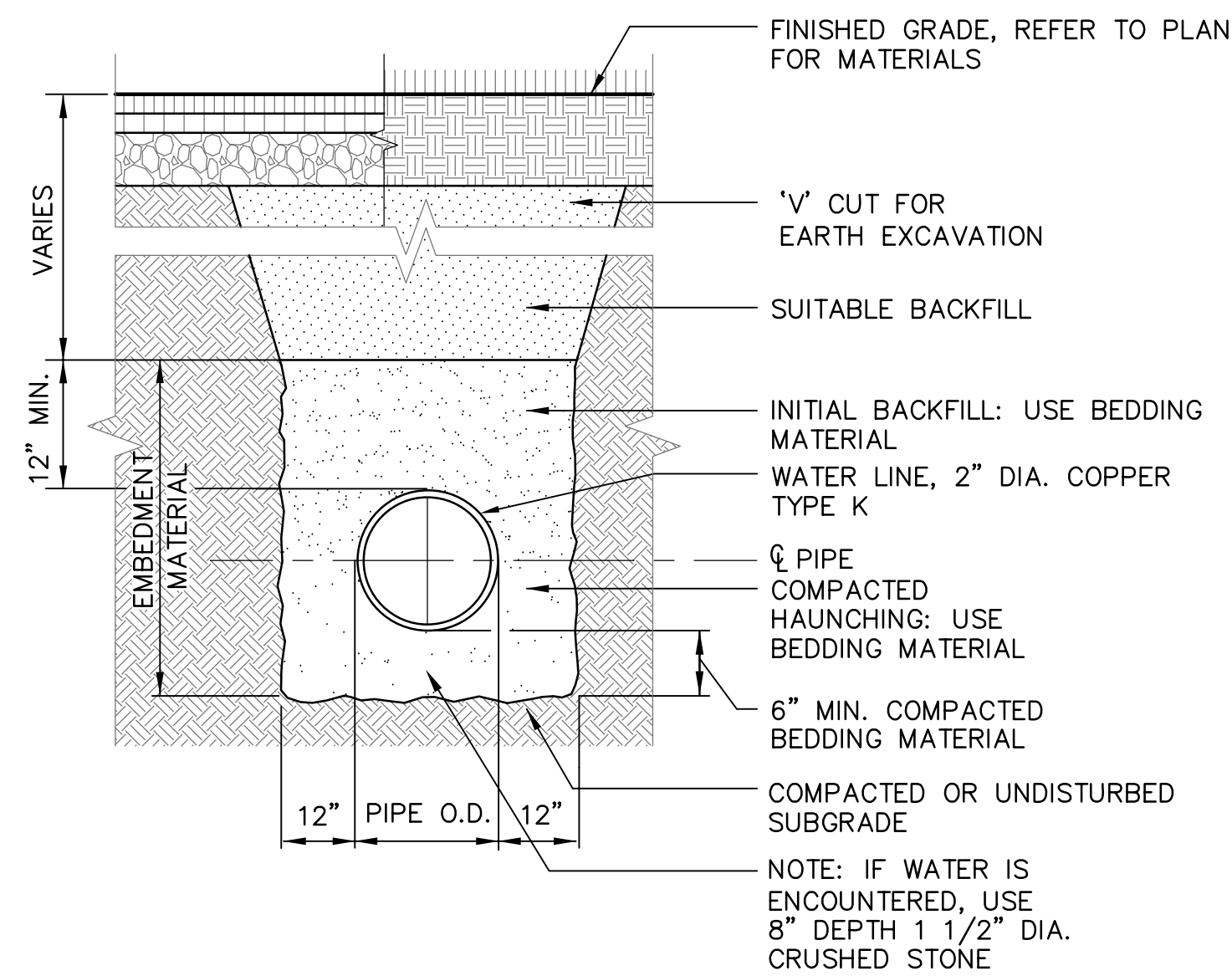
SECTION

**1** WATER SERVICE TRENCH PROFILE, TAPPING SLEEVE AND VALVE DETAIL, TYP.  
N.T.S.



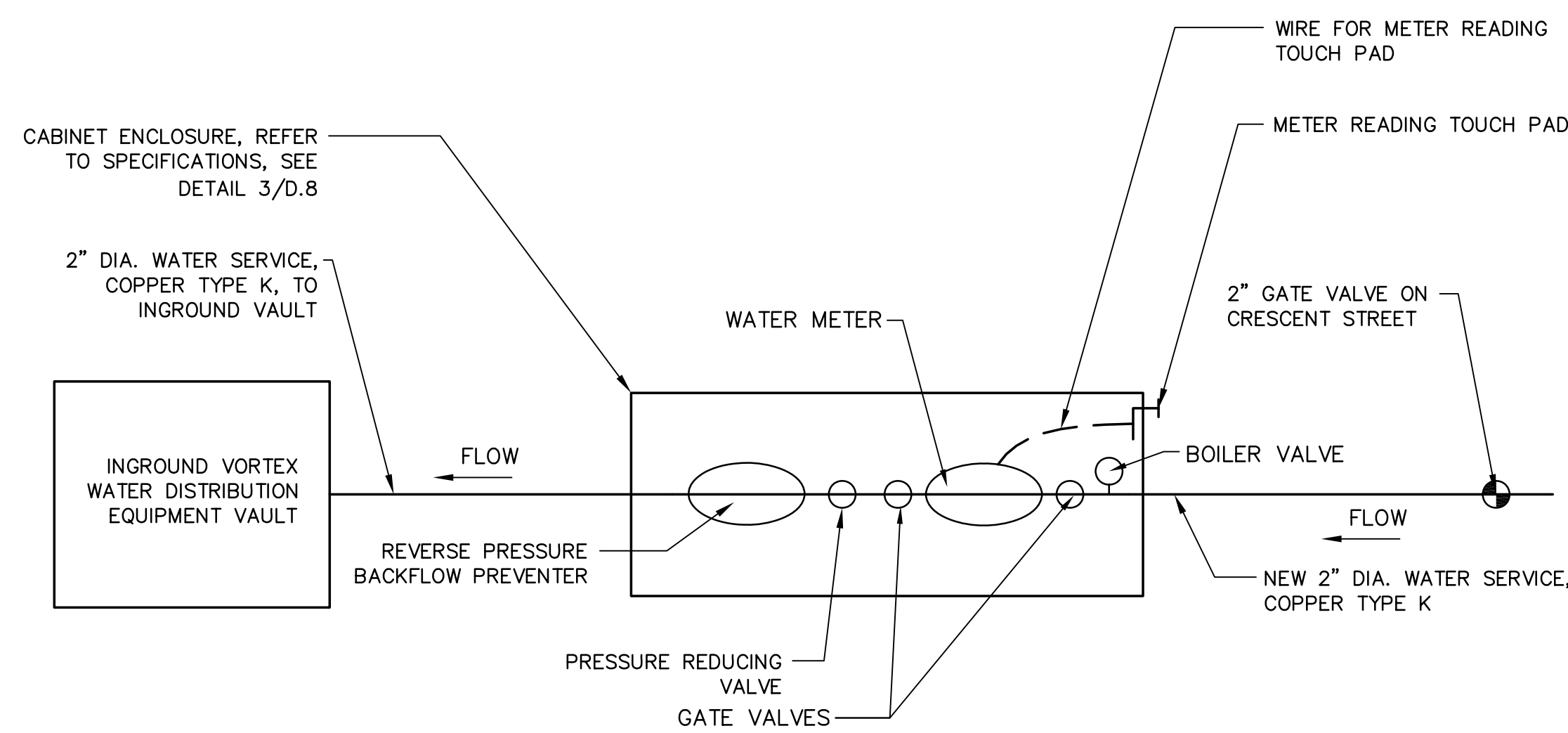
AXON

**5** CATCH BASIN INSERT INFILTRATION BAG, TYP.  
N.T.S.



SECTION

**4** WATER LINE TRENCH DETAIL  
N.T.S.

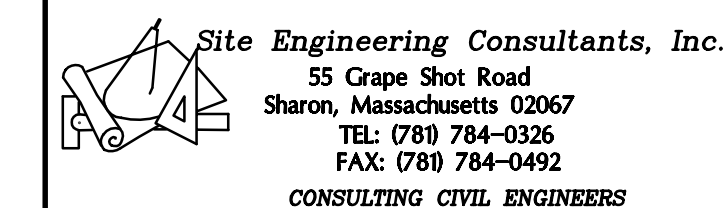


SCHEMATIC

**2** WATER SERVICE ONE LINE SCHEMATIC, TYP.  
N.T.S.

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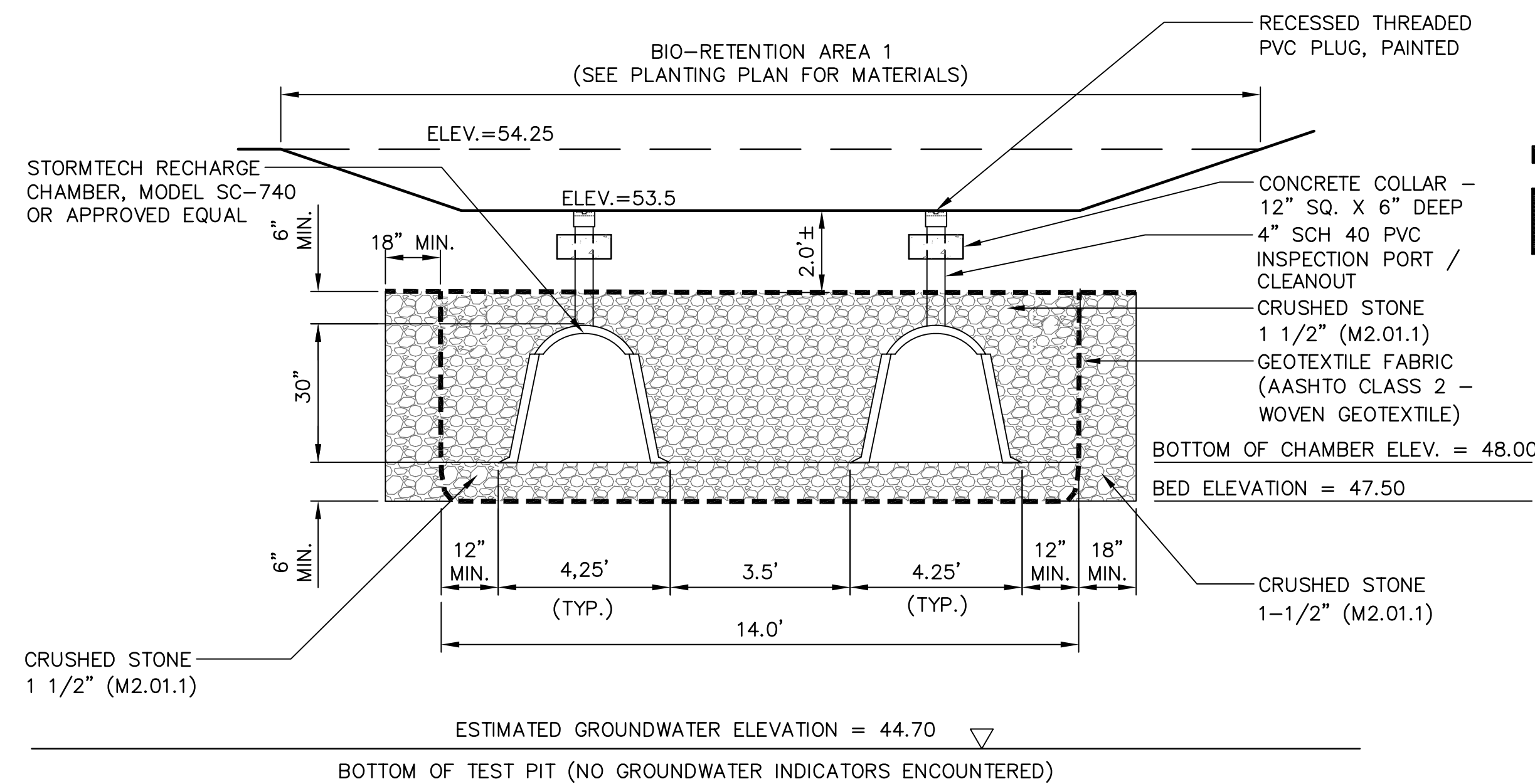
**WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451**

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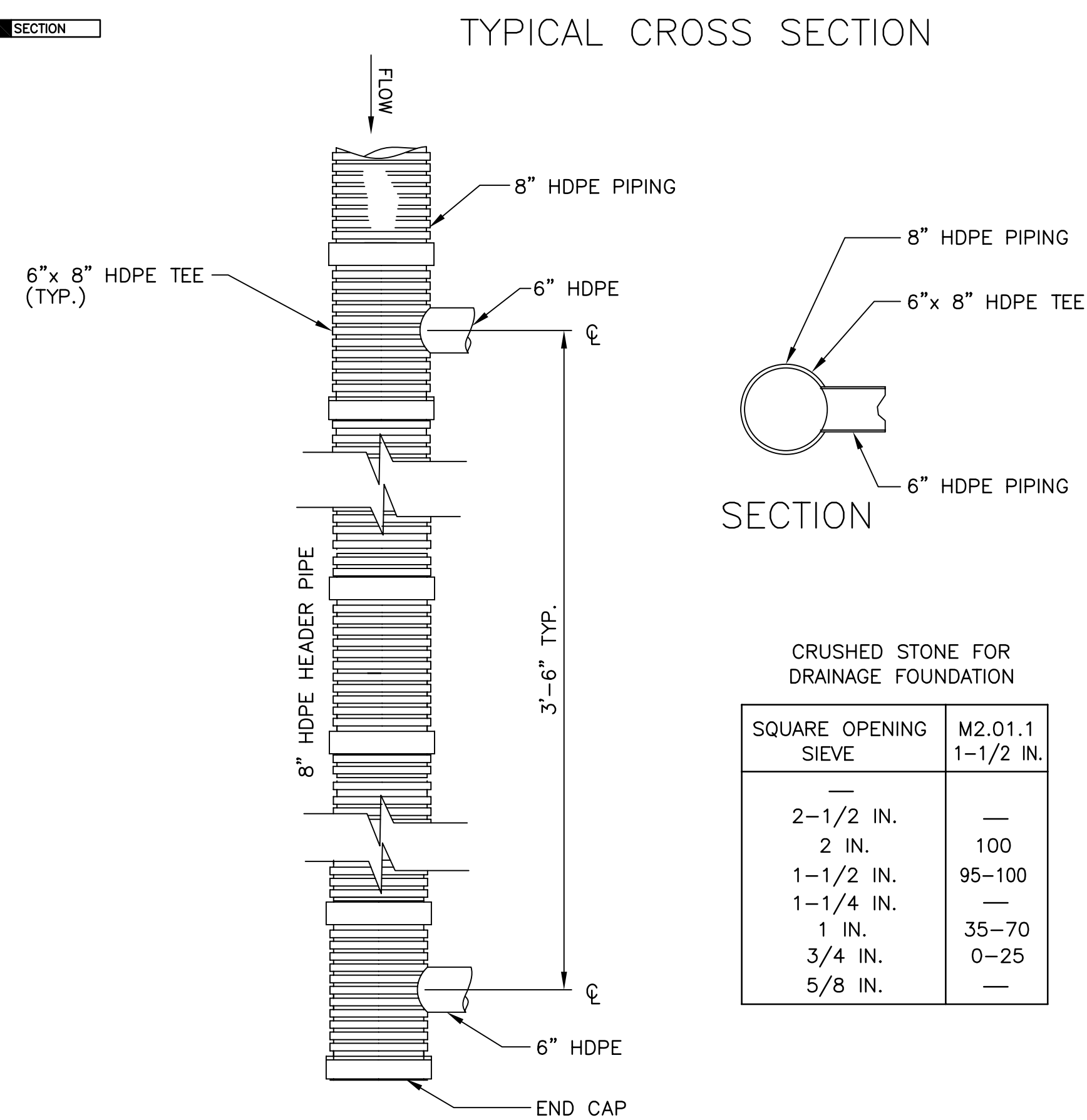
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Scale AS NOTED Date MAR 14, 2011  
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Approved By CCC  
Project No. 1021.00

DWG No. **D.8**



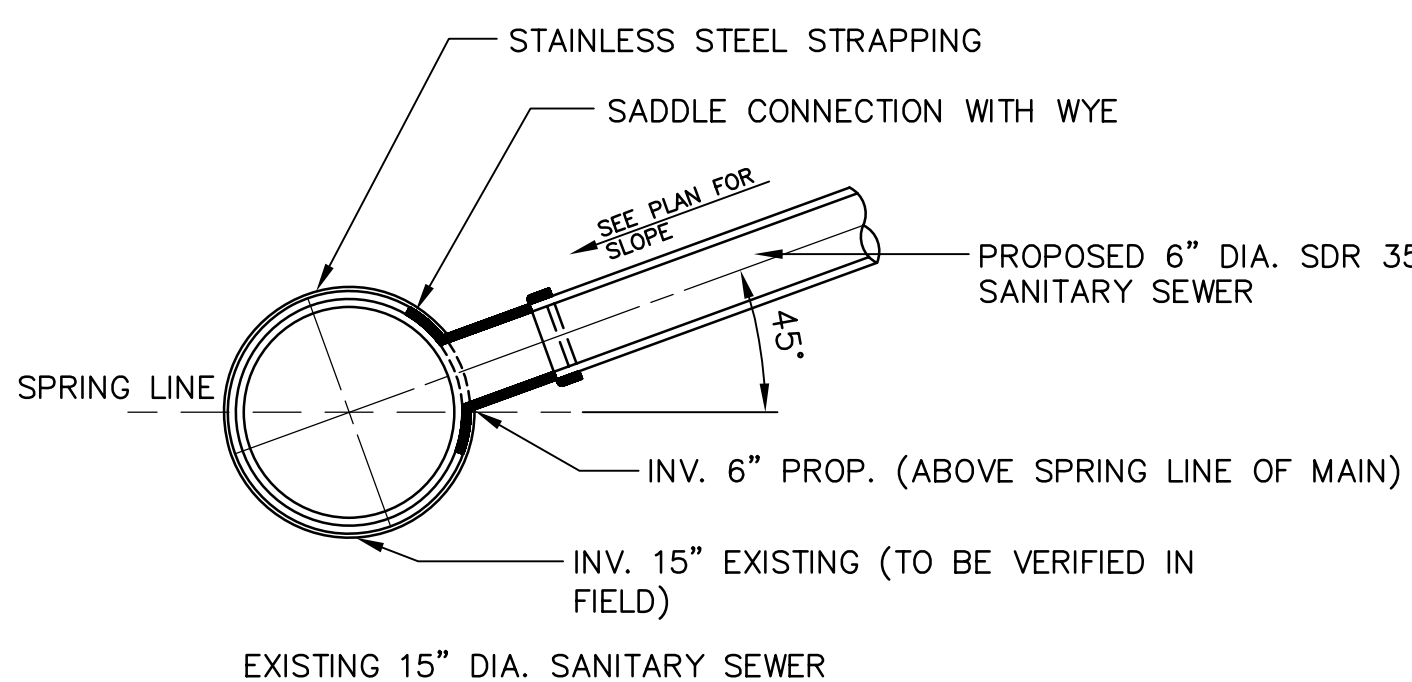
**SECTION**  
**3** STORM DRAIN MANHOLE DETAIL  
 N.T.S.



**SECTION**  
**4** STORM DRAIN PIPE AND SEWER PIPE TRENCH DETAIL, TYP.  
 N.T.S.

**CULTEC RECHARGER HEADER CONNECTOR**

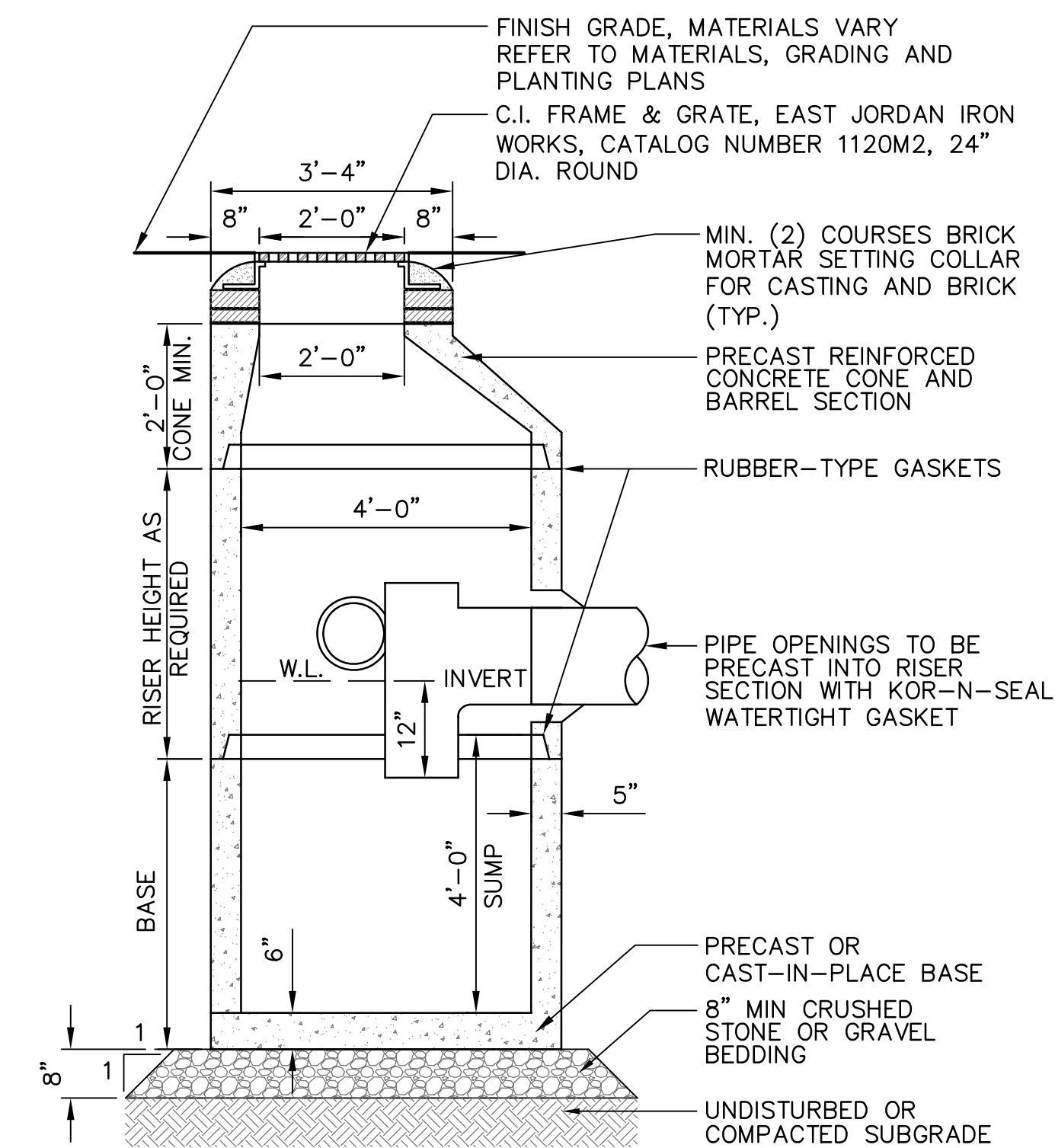
**PLAN**  
**6** INFILTRATION TRENCH DETAIL, TYP. (AT BIORETENTION AREA 1)  
 N.T.S.



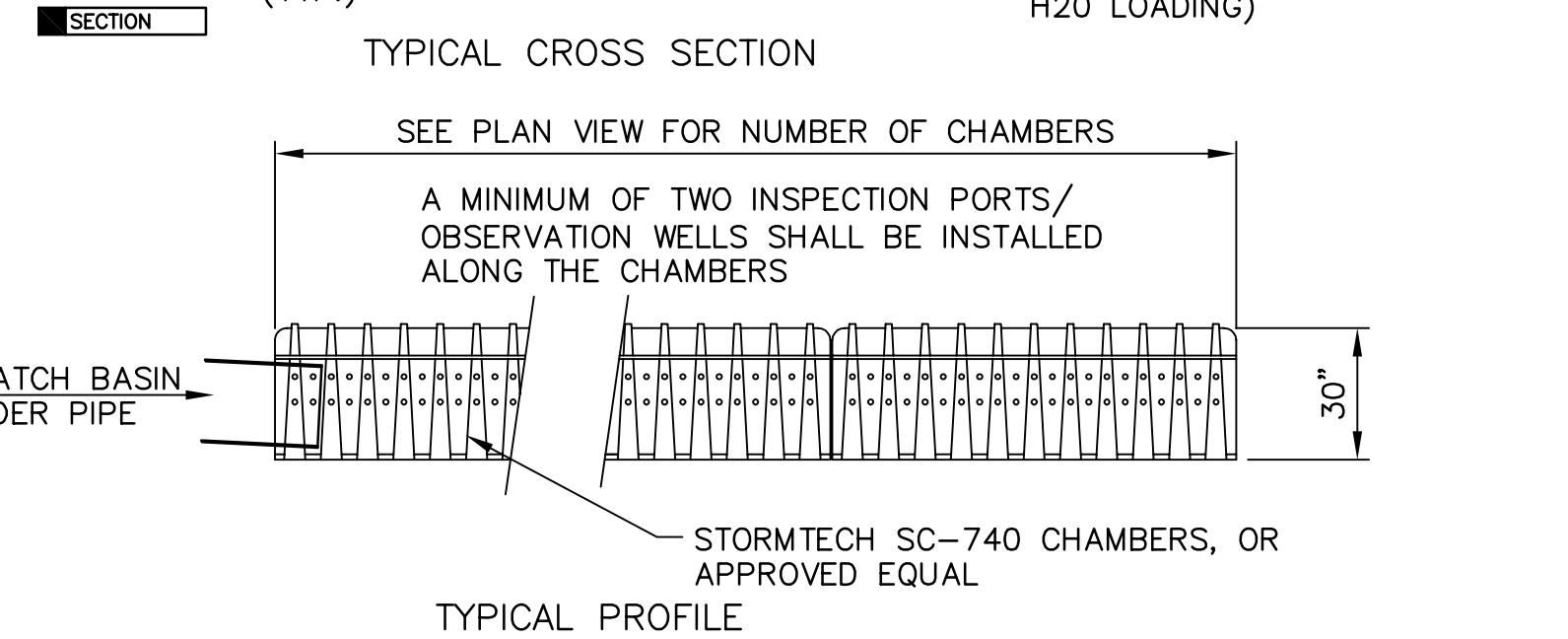
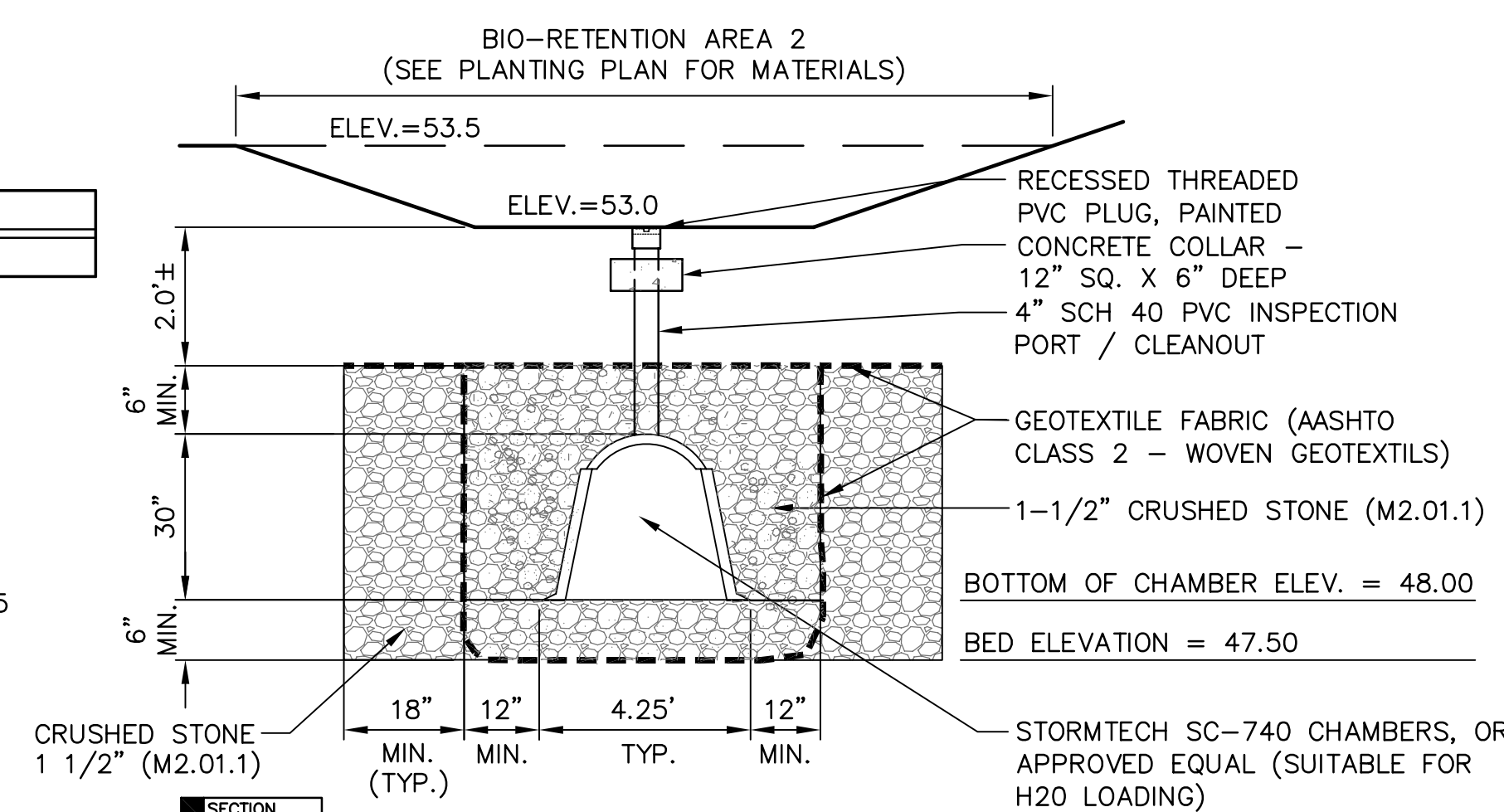
- NOTES:**
1. FULL PVC OR IRON SADDLE MAY BE USED TO CONNECT TO EXISTING PVC, CLAY, CONCRETE OR IRON PIPE.
  2. SADDLES MUST HAVE RUBBER GASKETS AND SHALL BE TIGHTENED WITH STRAPS. SADDLES WILL NOT BE CEMENTED ONTO THE PIPE.
  3. FULL WYE CONNECTION FITTINGS MAY BE USED.
  4. PIPE SHALL BE CUT TO CONFORM TO THE OPENING IN THE SADDLE.
  5. CONNECTIONS DIRECTLY INTO THE EXISTING PIPE WITHOUT A SADDLE OR FULL WYE FITTING ARE NOT ALLOWED.

**SECTION**  
**5** SADDLE CONNECTION TO EXISTING SANITARY SEWER  
 N.T.S.

**NOTE:**  
 H-20 DESIGNED PRECAST CONCRETE STRUCTURE  
 4000 PSI, 0.12 SQ. IN./LF AT WALLS AND BOTH  
 WAYS AT BOTTOM



**SECTION**  
**1** DEEP SUMP (GAS TRAP) CATCH BASIN DETAIL, TYP.  
 N.T.S.



**PROFILE**  
**2** INFILTRATION TRENCH DETAIL, TYP. (AT BIORETENTION AREA 2)  
 N.T.S.

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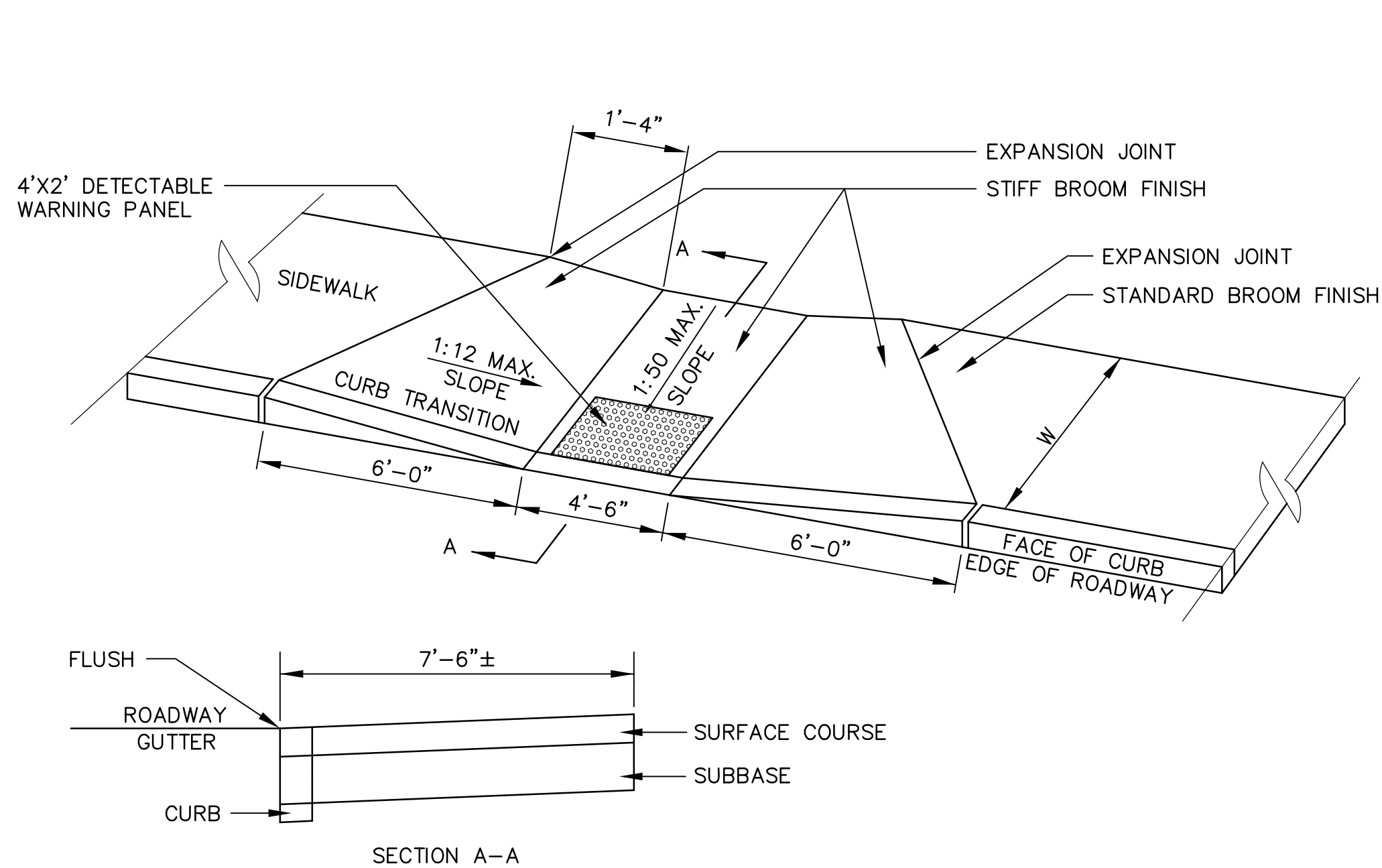
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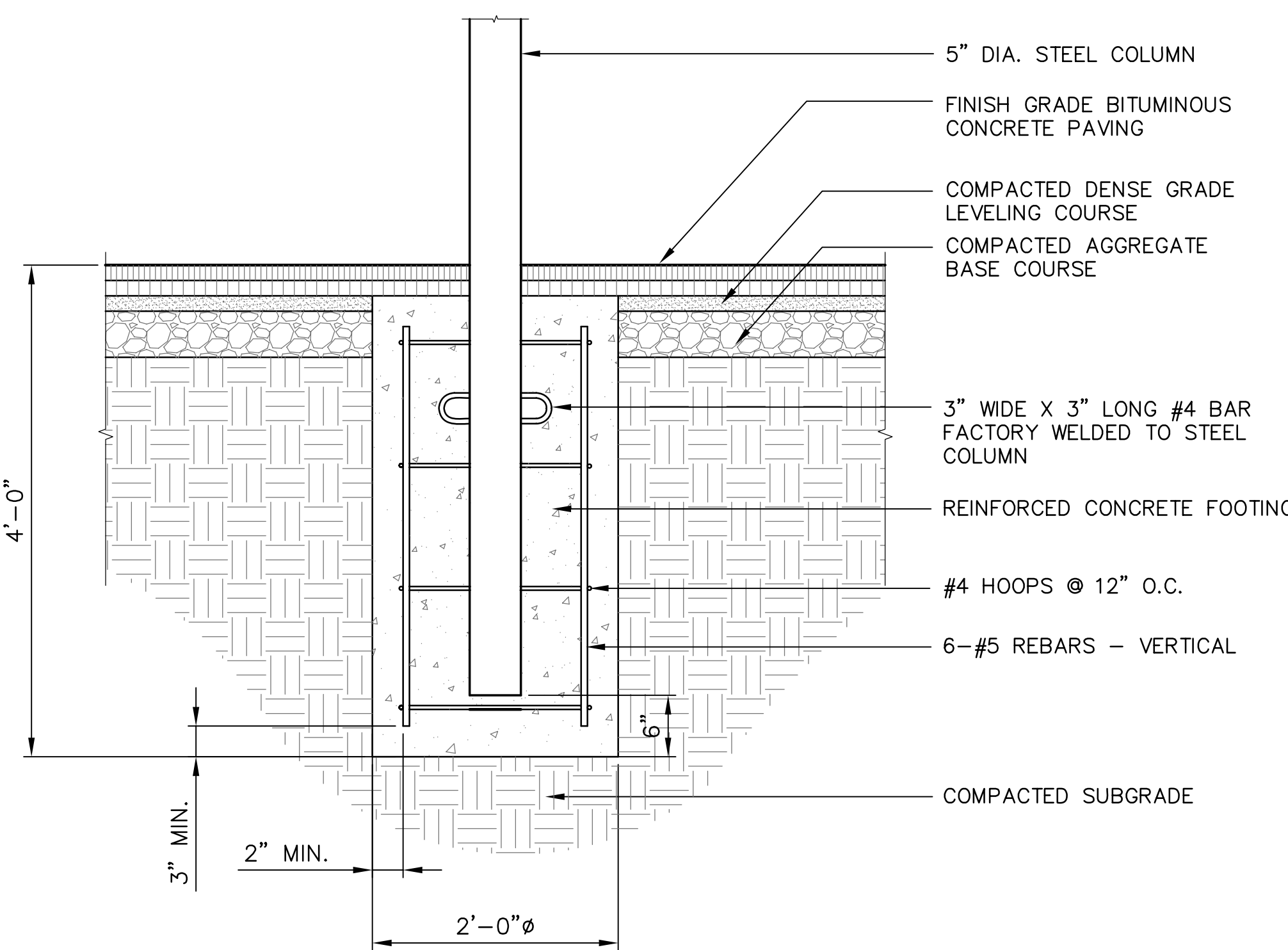
DWG No.

**D.7**

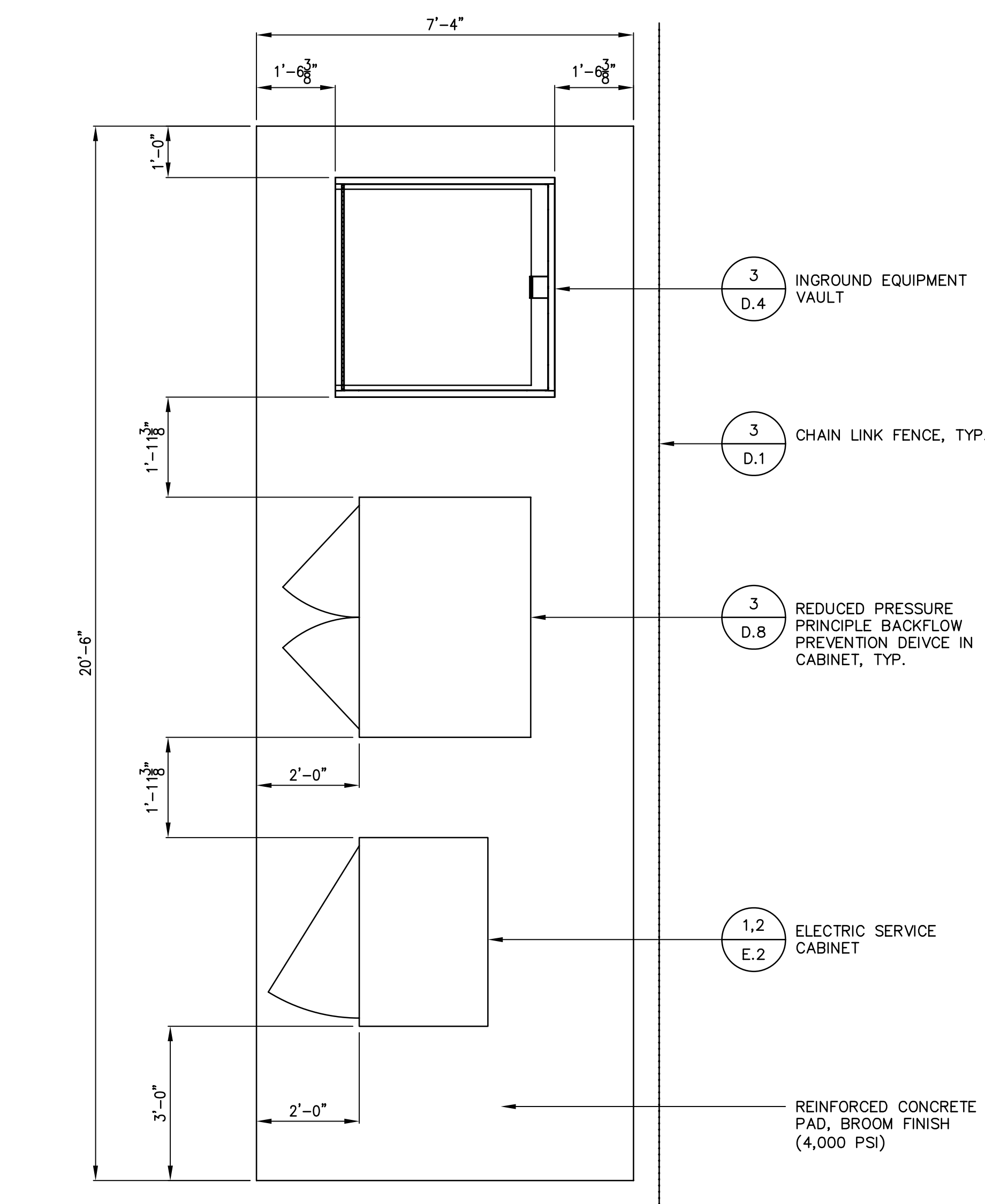




**SECTION**  
**4** WHEEL CHAIR RAMP DETAIL  
 N.T.S.

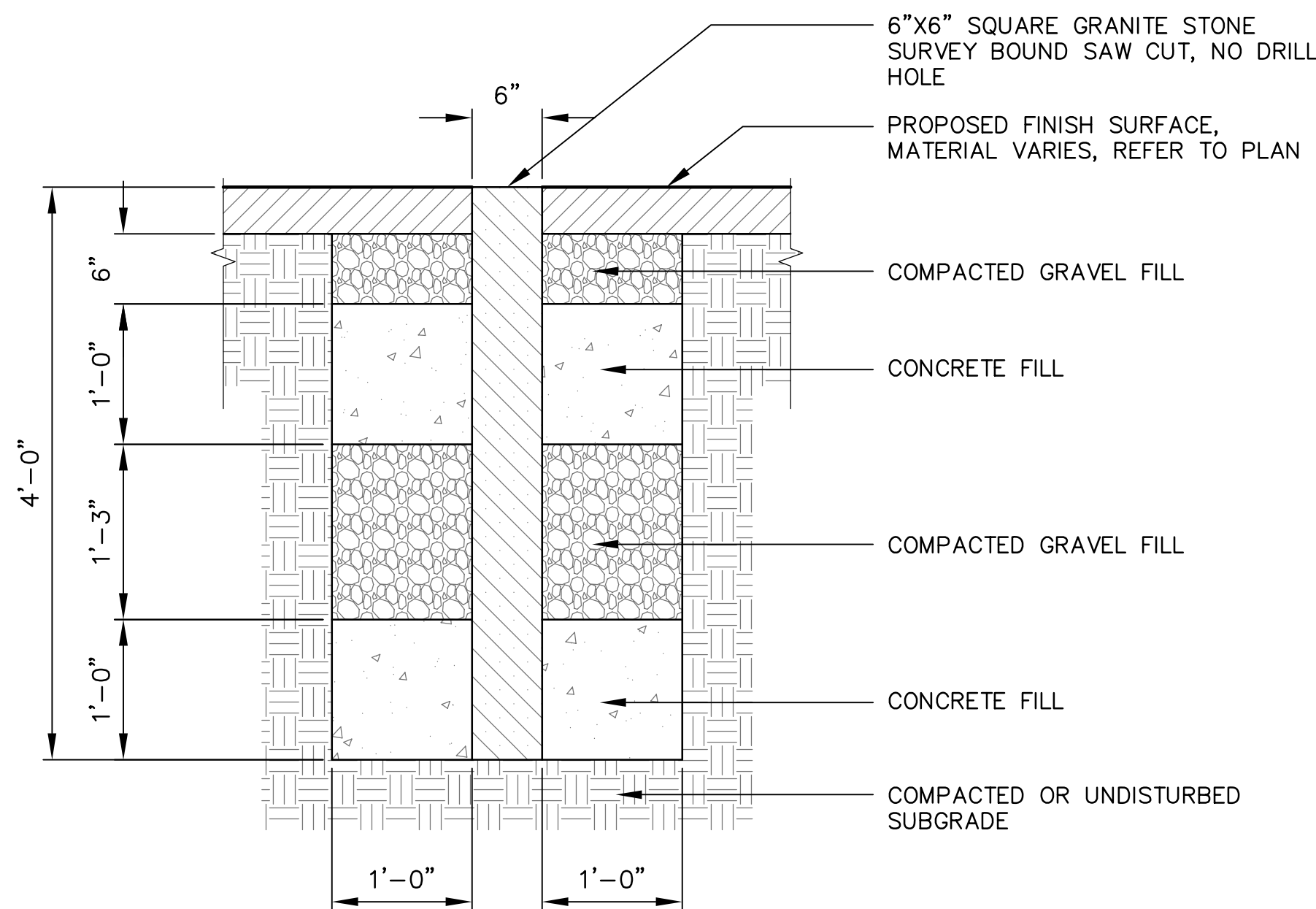


**SECTION**  
**5** SHADE SHELTER FOOTING DETAIL  
 1/2"=1'-0"

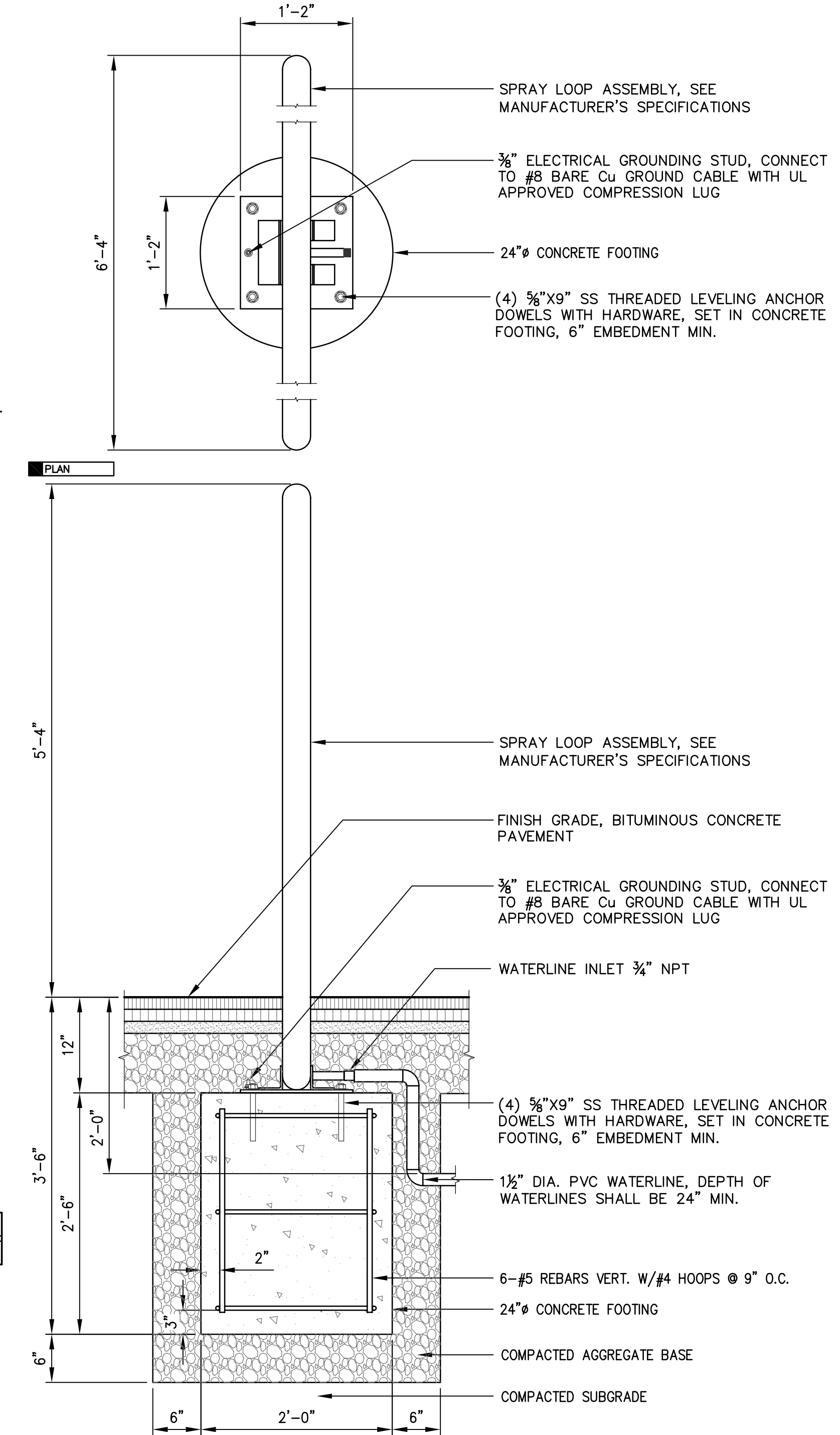


**PLAN**  
**2** COMMAND CENTER LAYOUT PLAN  
 SCALE 1/2" = 1'-0"

NOTE: STONE SURVEY BOUNDS TO BE SUPPLIED AND INSTALLED BY ALPHA SURVEYING AND ENGINEERING, CONTRACTOR TO COORDINATE REMOVAL AND INSTALLATION OF PAVEMENTS NECESSARY FOR SETTING (4) FOUR STONE BOUNDS AT EACH CORNER OF THE PROPERTY.



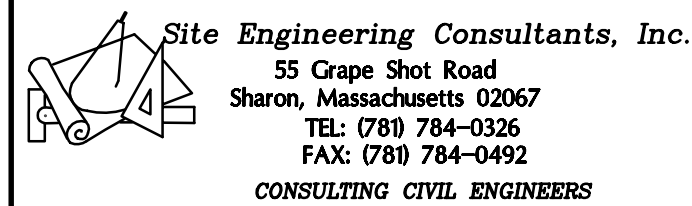
**SECTION**  
**3** STONE SURVEY BOUND DETAIL, TYP.  
 SCALE 1"=1'-0"



**SECTION**  
**1** SPRAY LOOP INSTALLATION DETAIL  
 SCALE 1"=1'-0"

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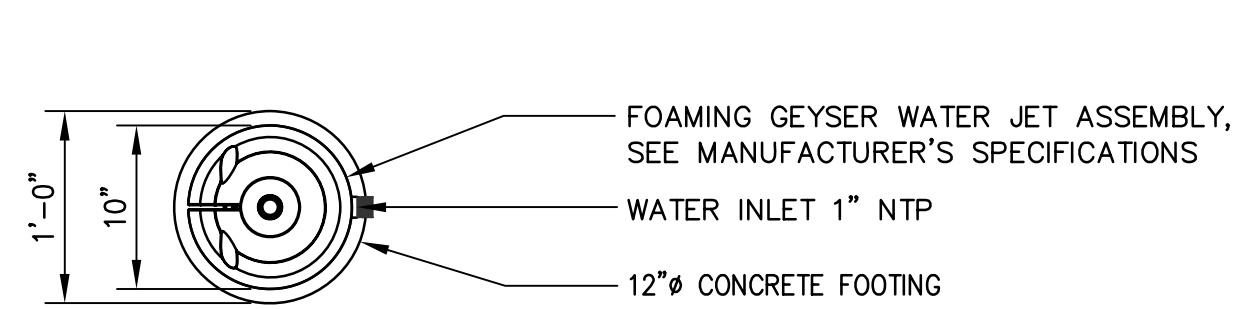
Prepared For:

**WALTHAM PLANNING**  
**DEPARTMENT**  
**119 SCHOOL STREET**  
**WALTHAM, MA 02451**

TITLE:  
**DETAILS**

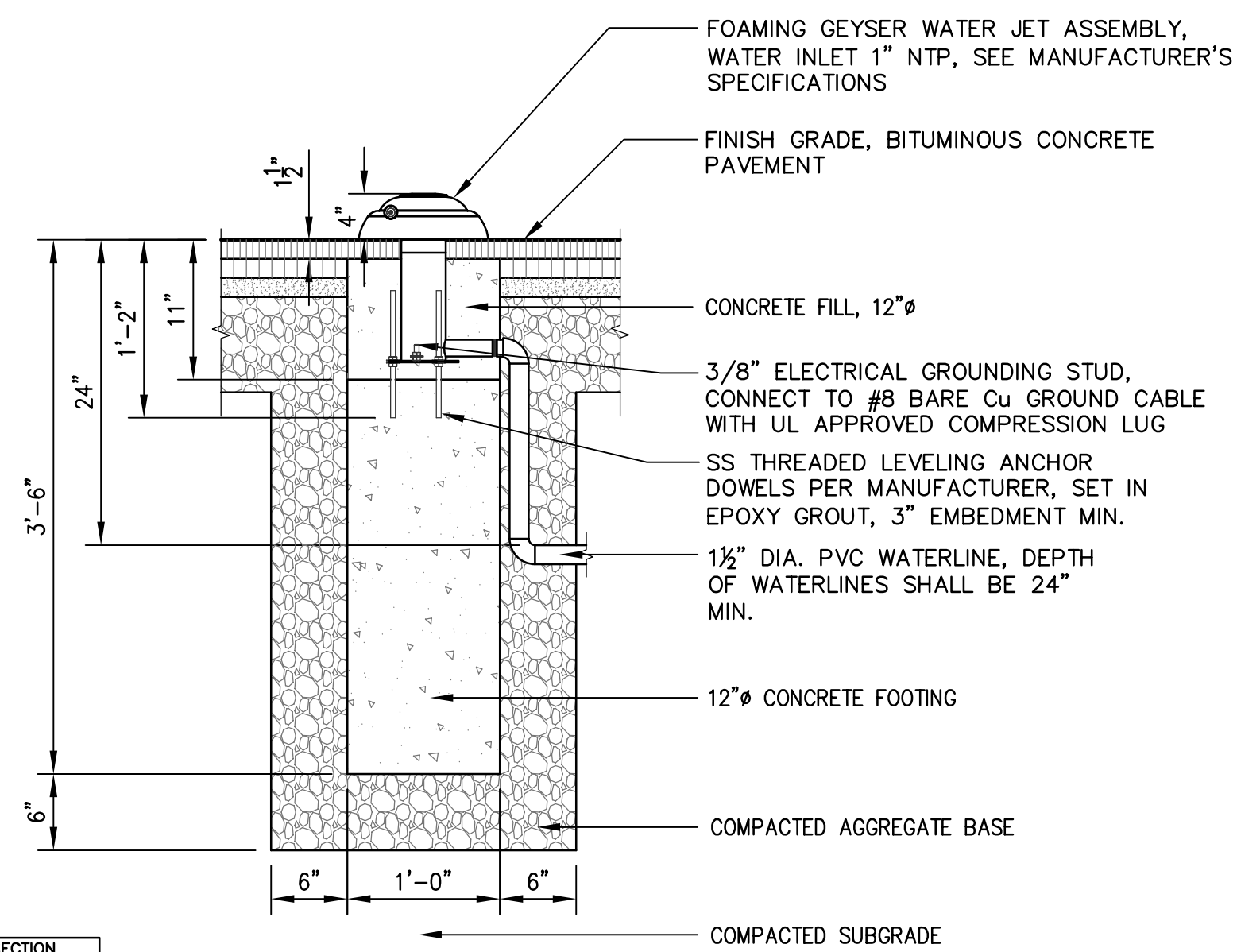
Scale AS NOTED Date MAR 14, 2011  
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 Project No. 1021.00

DWG No. **D.6**



FOAMING GEYSER WATER JET ASSEMBLY, SEE MANUFACTURER'S SPECIFICATIONS  
 WATER INLET 1" NTP  
 12"Ø CONCRETE FOOTING

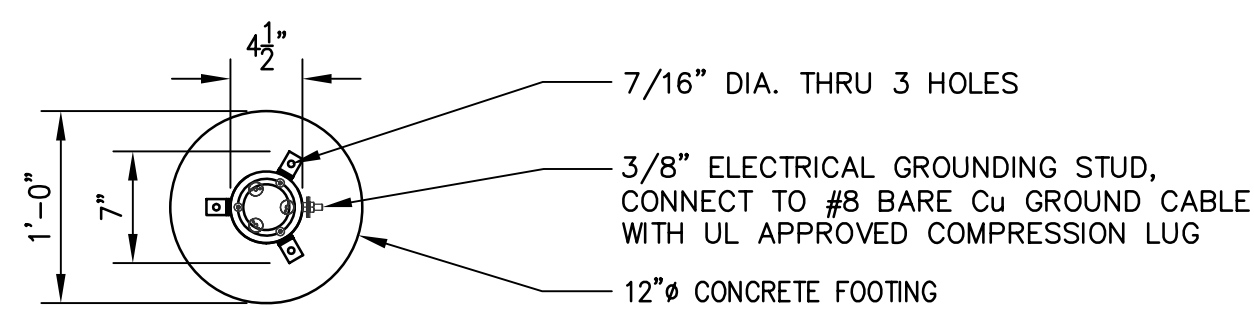
PLAN



FOAMING GEYSER WATER JET ASSEMBLY, WATER INLET 1" NTP, SEE MANUFACTURER'S SPECIFICATIONS  
 FINISH GRADE, BITUMINOUS CONCRETE PAVEMENT  
 CONCRETE FILL, 12"Ø  
 3/8" ELECTRICAL GROUNDING STUD, CONNECT TO #8 BARE Cu GROUND CABLE WITH UL APPROVED COMPRESSION LUG  
 SS THREADED LEVELING ANCHOR DOWELS PER MANUFACTURER, SET IN EPOXY GROUT, 3" EMBEDMENT MIN.  
 1 1/2" DIA. PVC WATERLINE, DEPTH OF WATERLINES SHALL BE 24" MIN.  
 12"Ø CONCRETE FOOTING  
 COMPACTED AGGREGATE BASE  
 COMPACTED SUBGRADE

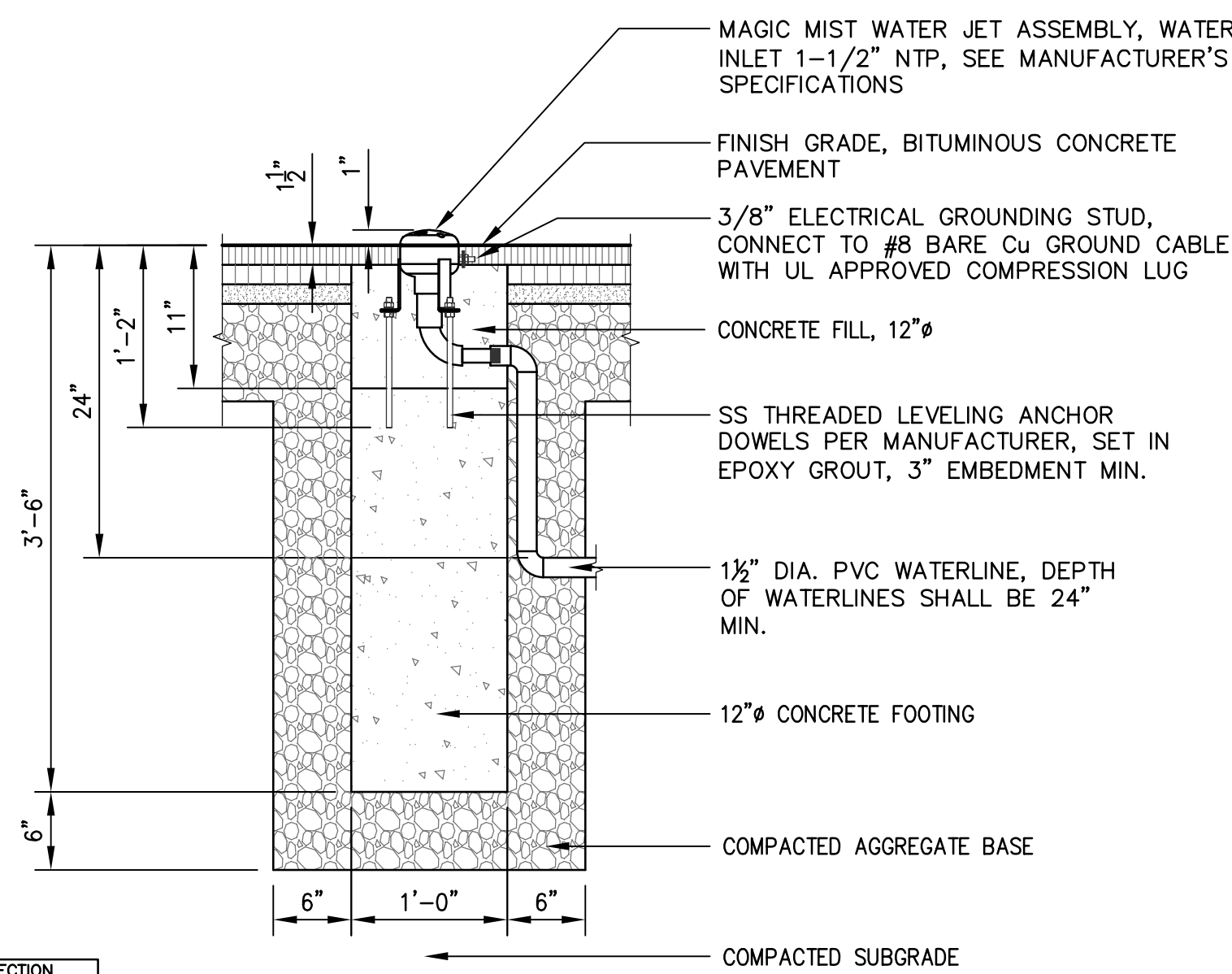
SECTION

**5** FOAMING GEYSER INSTALLATION DETAIL  
 SCALE 1"=1'-0"



7/16" DIA. THRU 3 HOLES  
 3/8" ELECTRICAL GROUNDING STUD, CONNECT TO #8 BARE Cu GROUND CABLE WITH UL APPROVED COMPRESSION LUG  
 12"Ø CONCRETE FOOTING

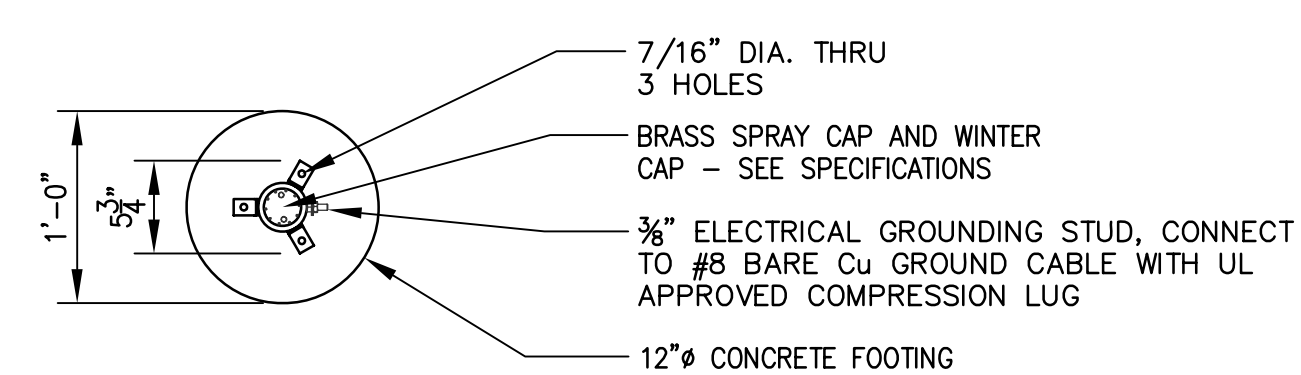
PLAN



MAGIC MIST WATER JET ASSEMBLY, WATER INLET 1-1/2" NTP, SEE MANUFACTURER'S SPECIFICATIONS  
 FINISH GRADE, BITUMINOUS CONCRETE PAVEMENT  
 CONCRETE FILL, 12"Ø  
 3/8" ELECTRICAL GROUNDING STUD, CONNECT TO #8 BARE Cu GROUND CABLE WITH UL APPROVED COMPRESSION LUG  
 SS THREADED LEVELING ANCHOR DOWELS PER MANUFACTURER, SET IN EPOXY GROUT, 3" EMBEDMENT MIN.  
 1 1/2" DIA. PVC WATERLINE, DEPTH OF WATERLINES SHALL BE 24" MIN.  
 12"Ø CONCRETE FOOTING  
 COMPACTED AGGREGATE BASE  
 COMPACTED SUBGRADE

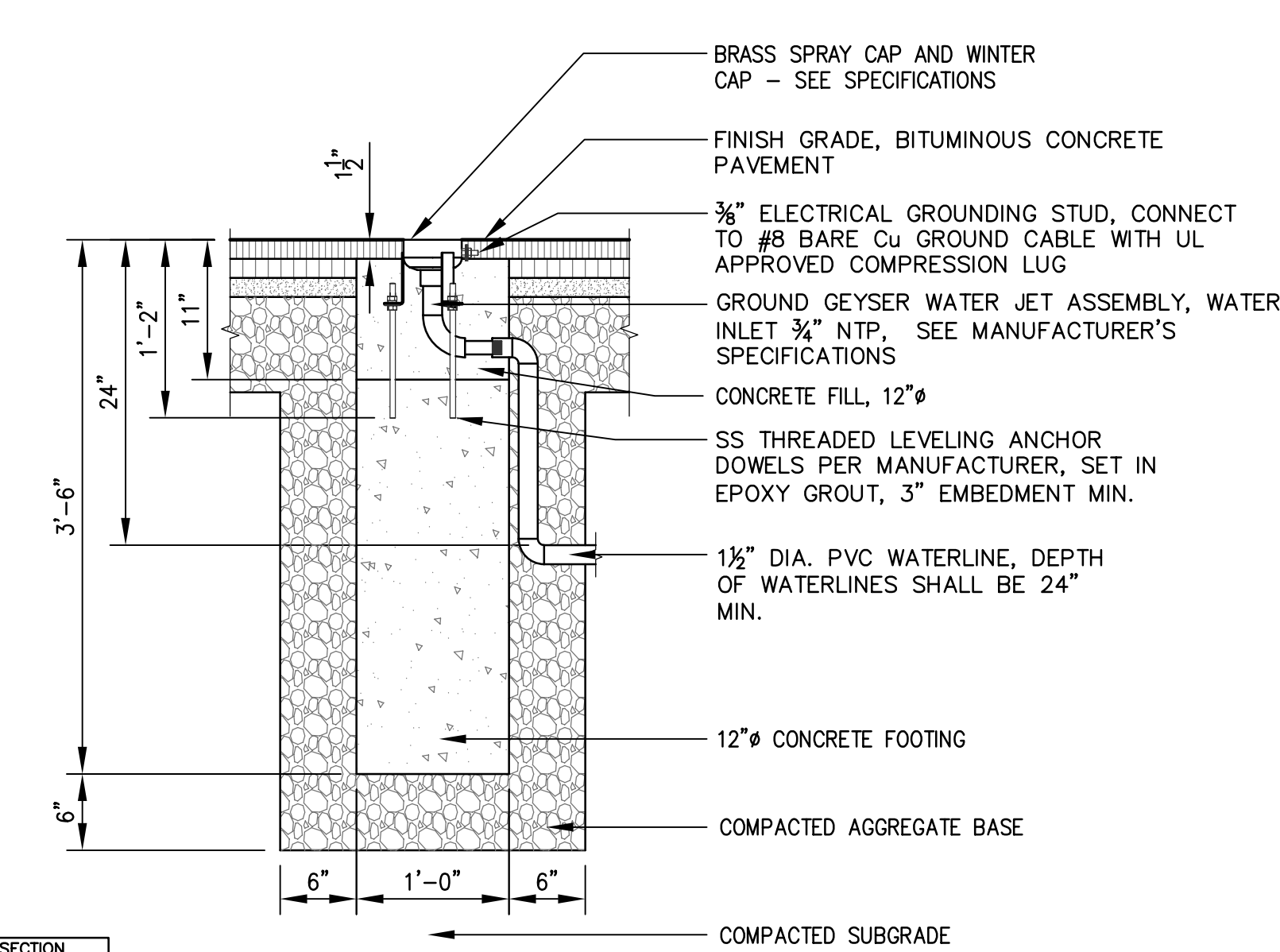
SECTION

**3** MAGIC MIST WATER JET INSTALLATION DETAIL  
 SCALE 1"=1'-0"



7/16" DIA. THRU 3 HOLES  
 BRASS SPRAY CAP AND WINTER CAP - SEE SPECIFICATIONS  
 3/8" ELECTRICAL GROUNDING STUD, CONNECT TO #8 BARE Cu GROUND CABLE WITH UL APPROVED COMPRESSION LUG  
 12"Ø CONCRETE FOOTING

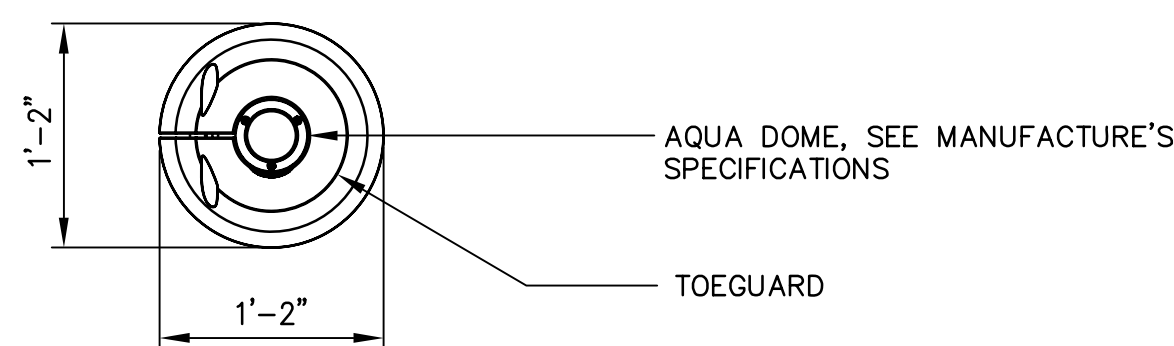
PLAN



BRASS SPRAY CAP AND WINTER CAP - SEE SPECIFICATIONS  
 FINISH GRADE, BITUMINOUS CONCRETE PAVEMENT  
 CONCRETE FILL, 12"Ø  
 3/8" ELECTRICAL GROUNDING STUD, CONNECT TO #8 BARE Cu GROUND CABLE WITH UL APPROVED COMPRESSION LUG  
 GROUND GEYSER WATER JET ASSEMBLY, WATER INLET 3/4" NTP, SEE MANUFACTURER'S SPECIFICATIONS  
 SS THREADED LEVELING ANCHOR DOWELS PER MANUFACTURER, SET IN EPOXY GROUT, 3" EMBEDMENT MIN.  
 1 1/2" DIA. PVC WATERLINE, DEPTH OF WATERLINES SHALL BE 24" MIN.  
 12"Ø CONCRETE FOOTING  
 COMPACTED AGGREGATE BASE  
 COMPACTED SUBGRADE

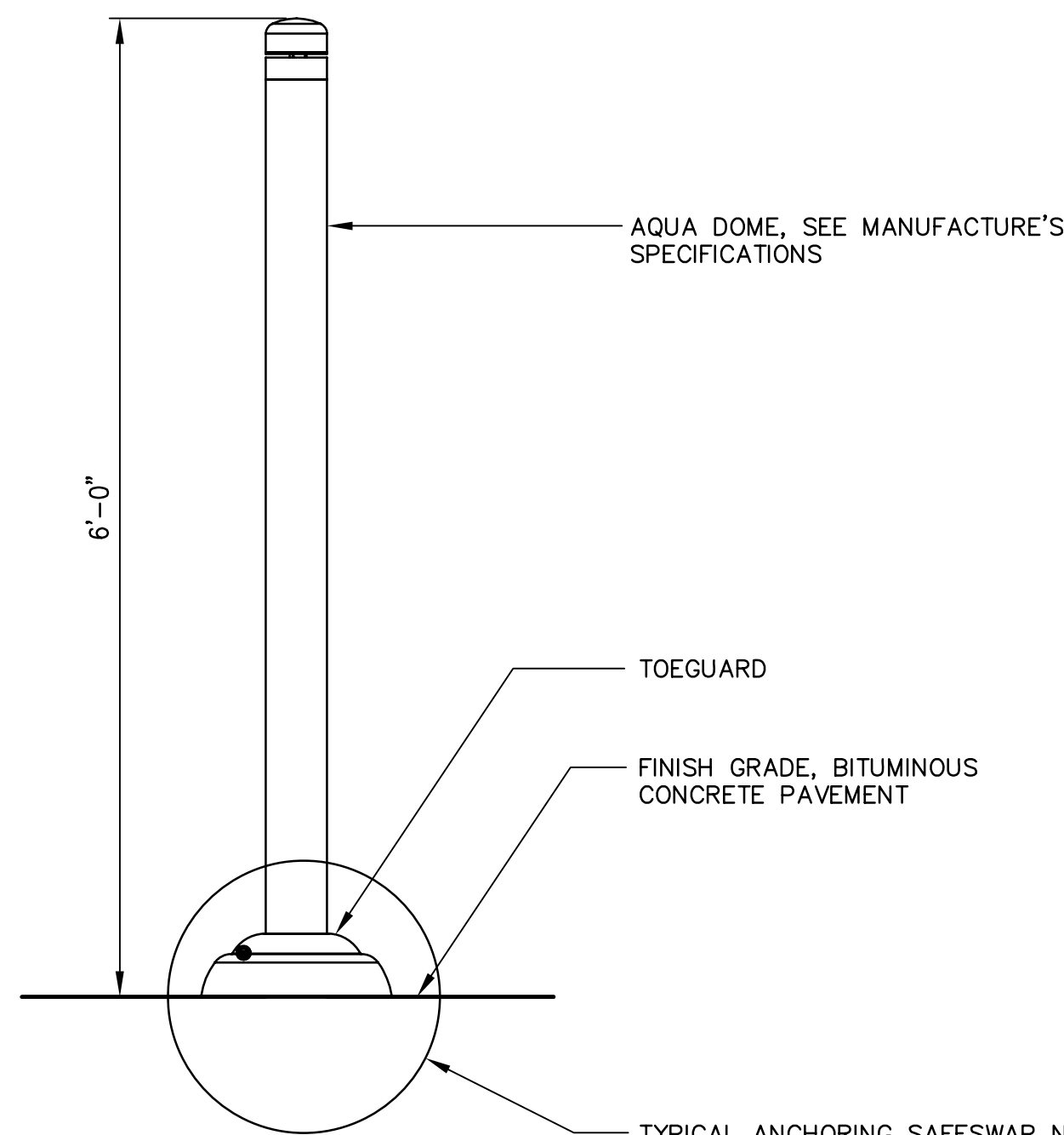
SECTION

**1** GROUND GEYSER WATER JET INSTALLATION DETAIL  
 SCALE 1"=1'-0"



AQUA DOME, SEE MANUFACTURER'S SPECIFICATIONS  
 TOEGUARD

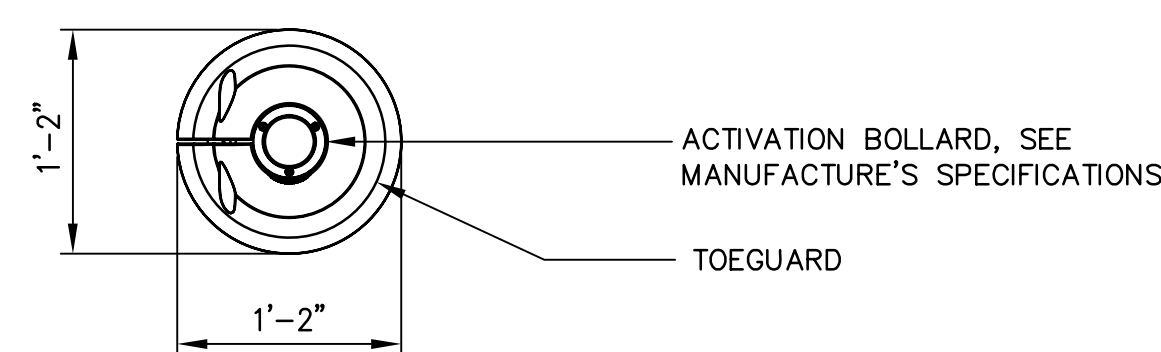
PLAN



AQUA DOME, SEE MANUFACTURER'S SPECIFICATIONS  
 TOEGUARD  
 FINISH GRADE, BITUMINOUS CONCRETE PAVEMENT  
 TYPICAL ANCHORING SAFESWAP NO 1, REFER TO DETAIL 4/D.4

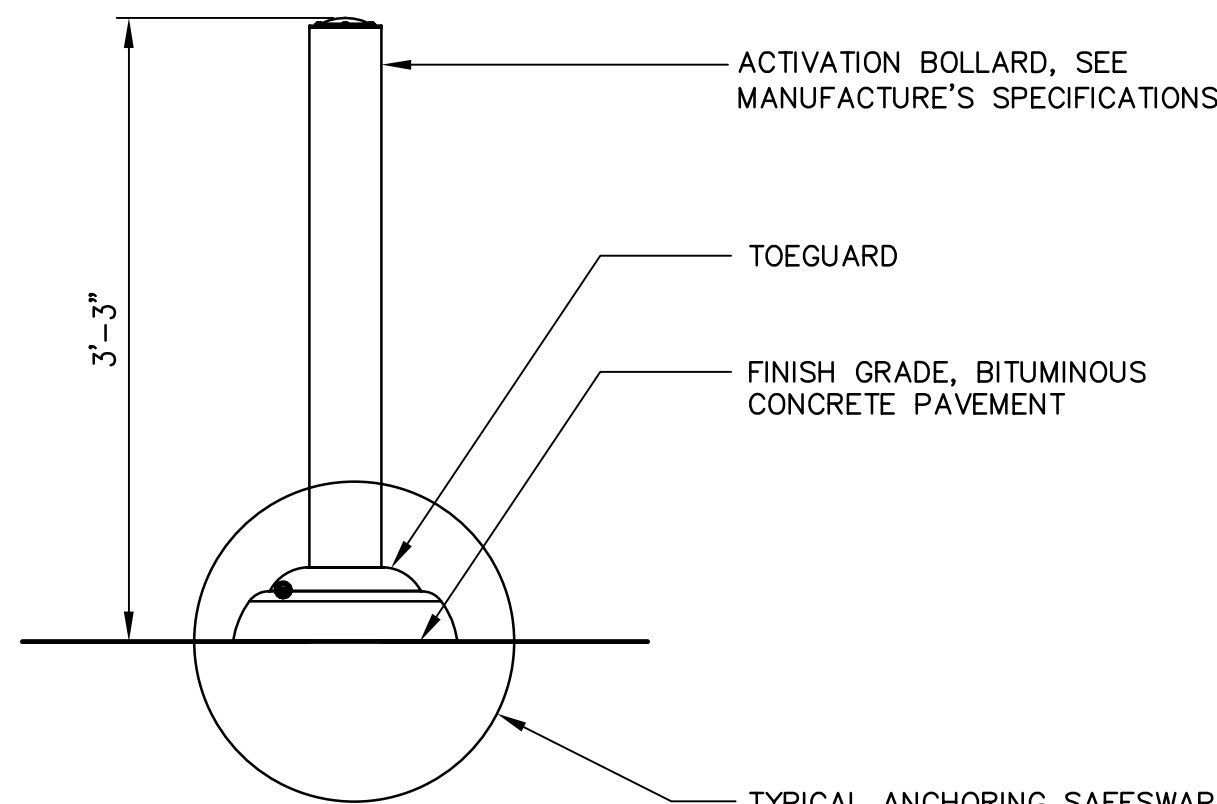
ELEVATION

**4** AQUA DOME DETAIL  
 SCALE 1"=1'-0"



ACTIVATION BOLLARD, SEE MANUFACTURER'S SPECIFICATIONS  
 TOEGUARD

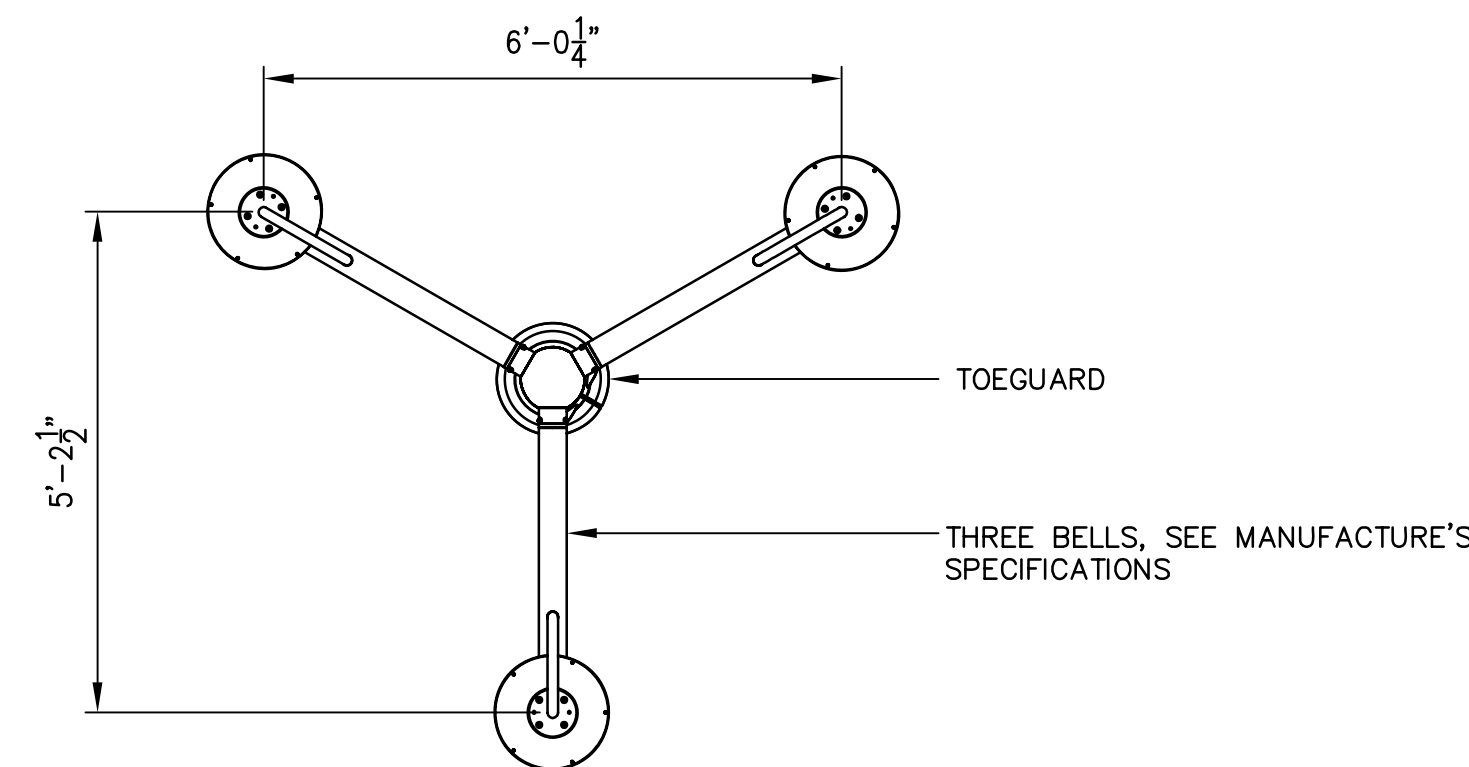
PLAN



ACTIVATION BOLLARD, SEE MANUFACTURER'S SPECIFICATIONS  
 TOEGUARD  
 FINISH GRADE, BITUMINOUS CONCRETE PAVEMENT  
 TYPICAL ANCHORING SAFESWAP NO 1, REFER TO DETAIL 4/D.4, 14 AWG-2 WIRE CONDUCTOR WITH GROUND TO BE USED FOR ELECTRICAL CONNECTION TO CONTROLLER

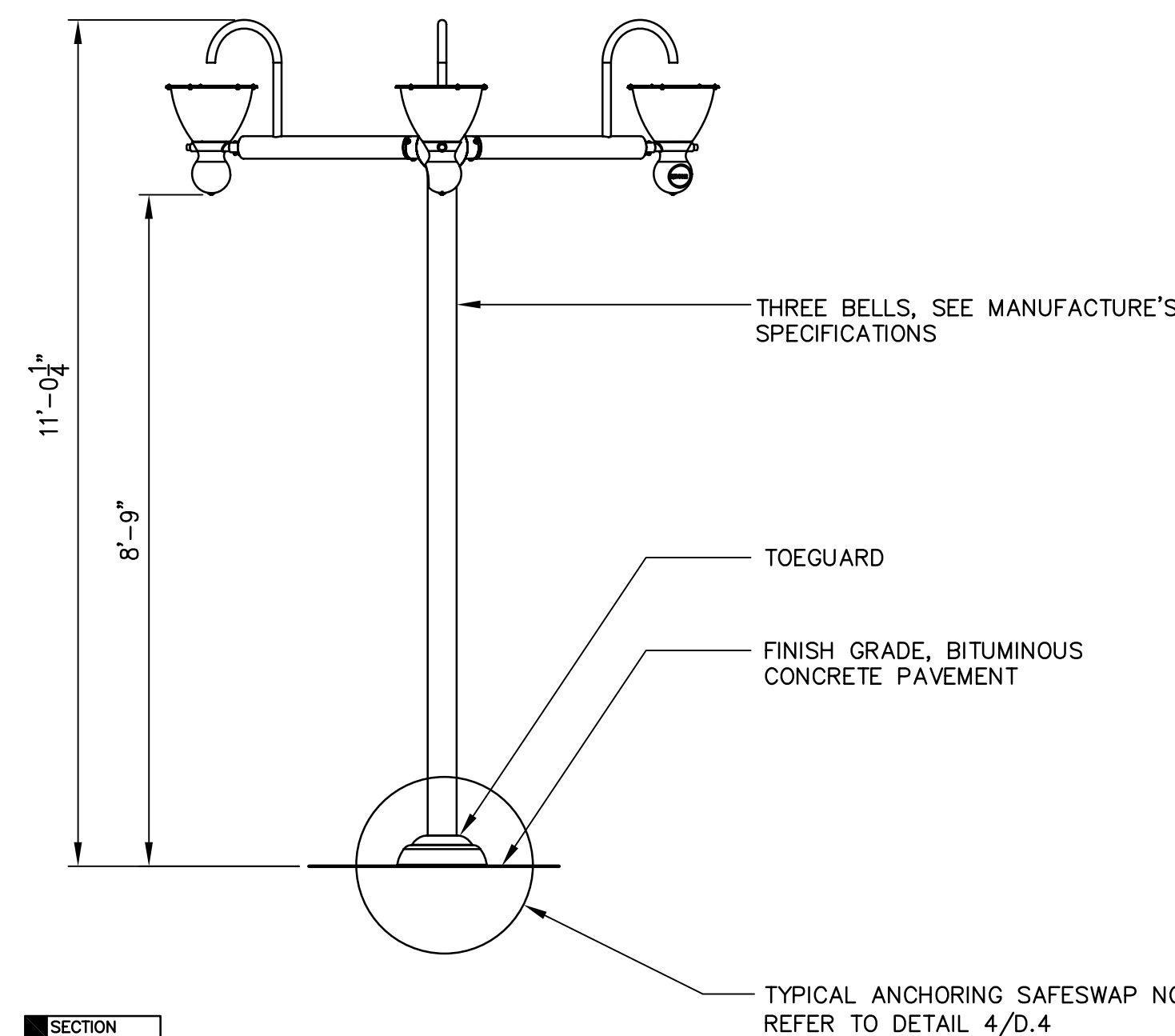
SECTION

**6** ACTIVATION BOLLARD DETAIL  
 SCALE 1"=1'-0"



TOEGUARD  
 THREE BELLS, SEE MANUFACTURER'S SPECIFICATIONS

PLAN



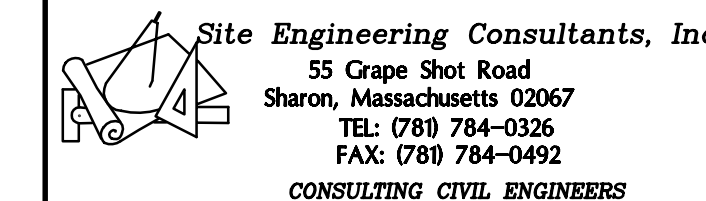
THREE BELLS, SEE MANUFACTURER'S SPECIFICATIONS  
 TOEGUARD  
 FINISH GRADE, BITUMINOUS CONCRETE PAVEMENT  
 TYPICAL ANCHORING SAFESWAP NO 1, REFER TO DETAIL 4/D.4

SECTION

**2** THREE BELLS INSTALLATION DETAIL  
 SCALE 1/2"=1'-0"

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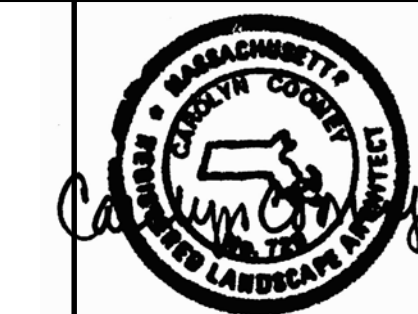
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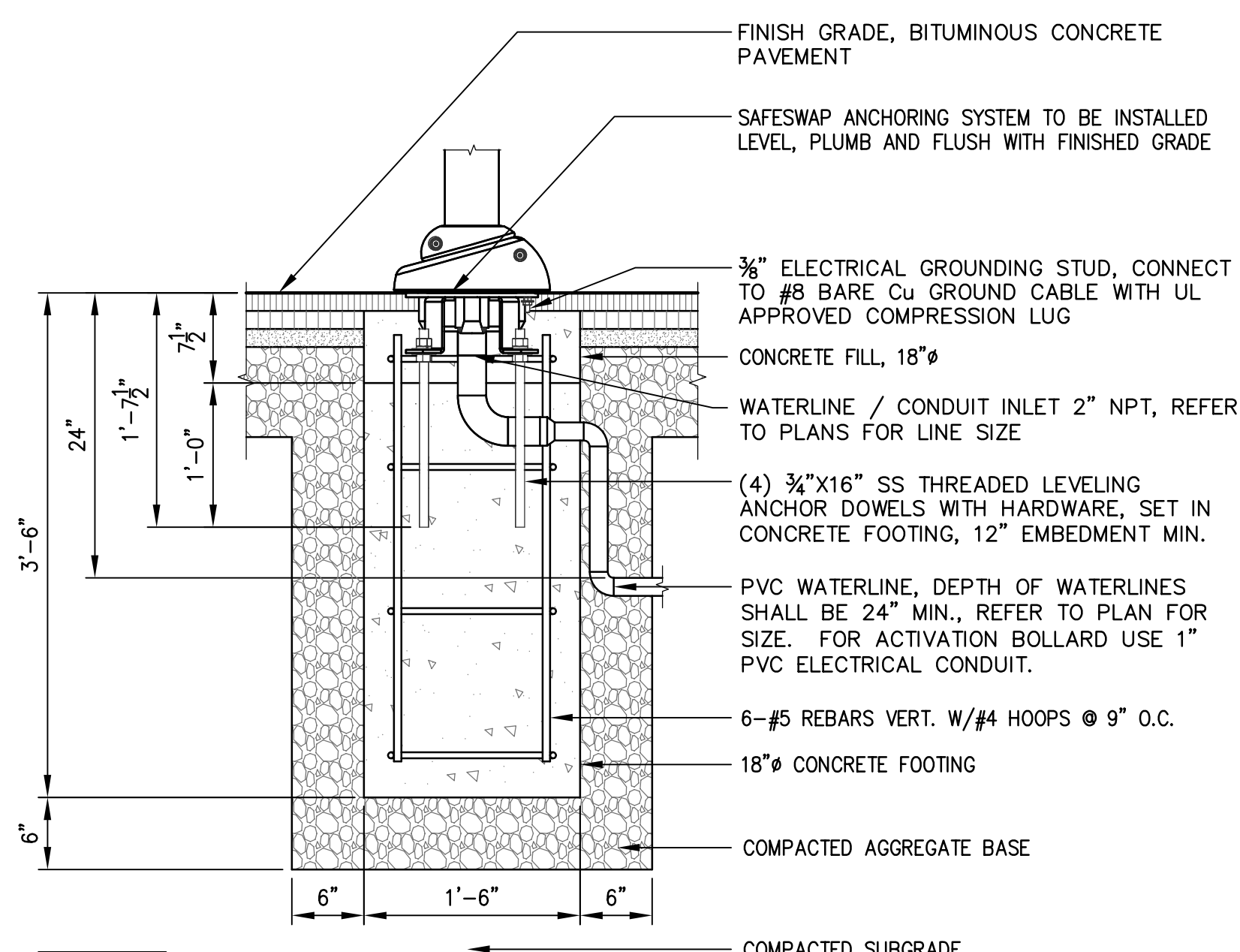
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**SPRAY FEATURE  
 DETAILS**

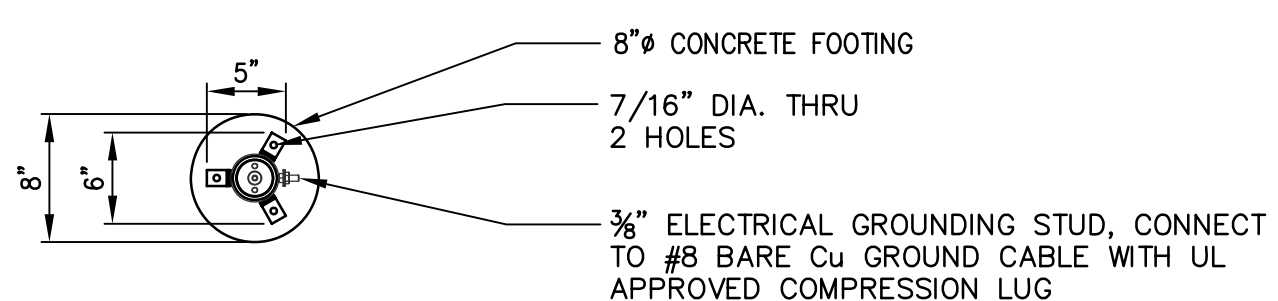
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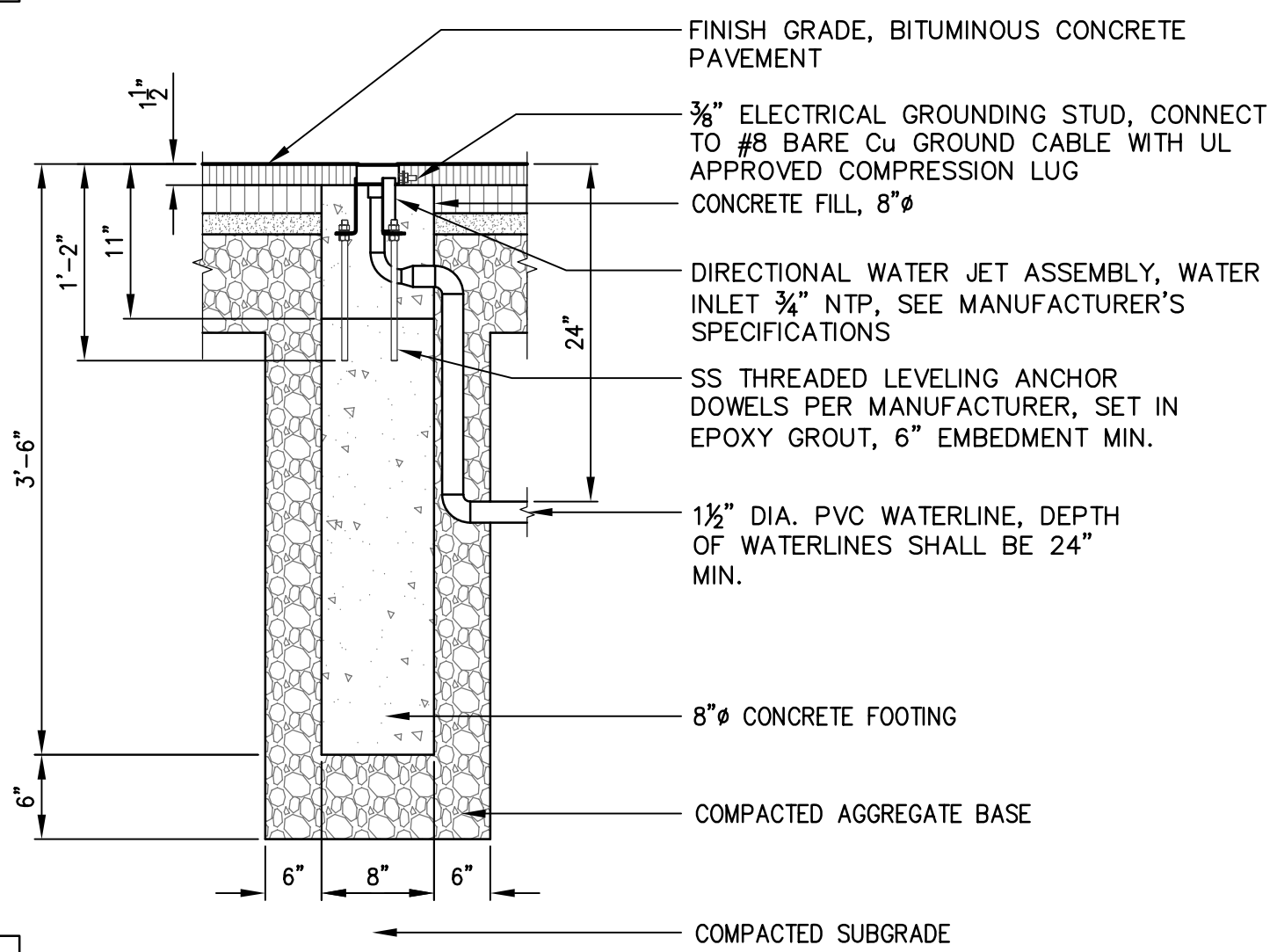
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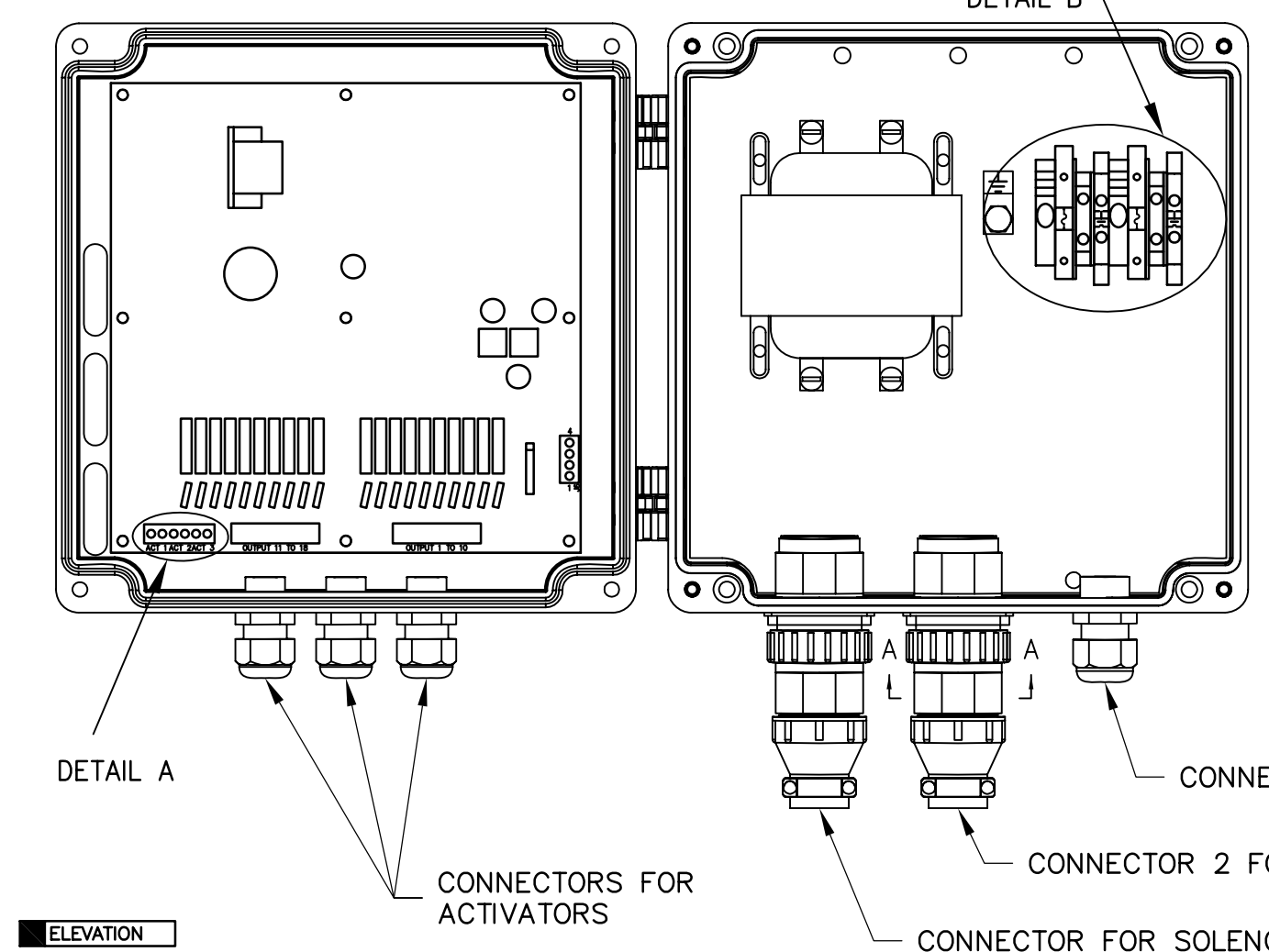
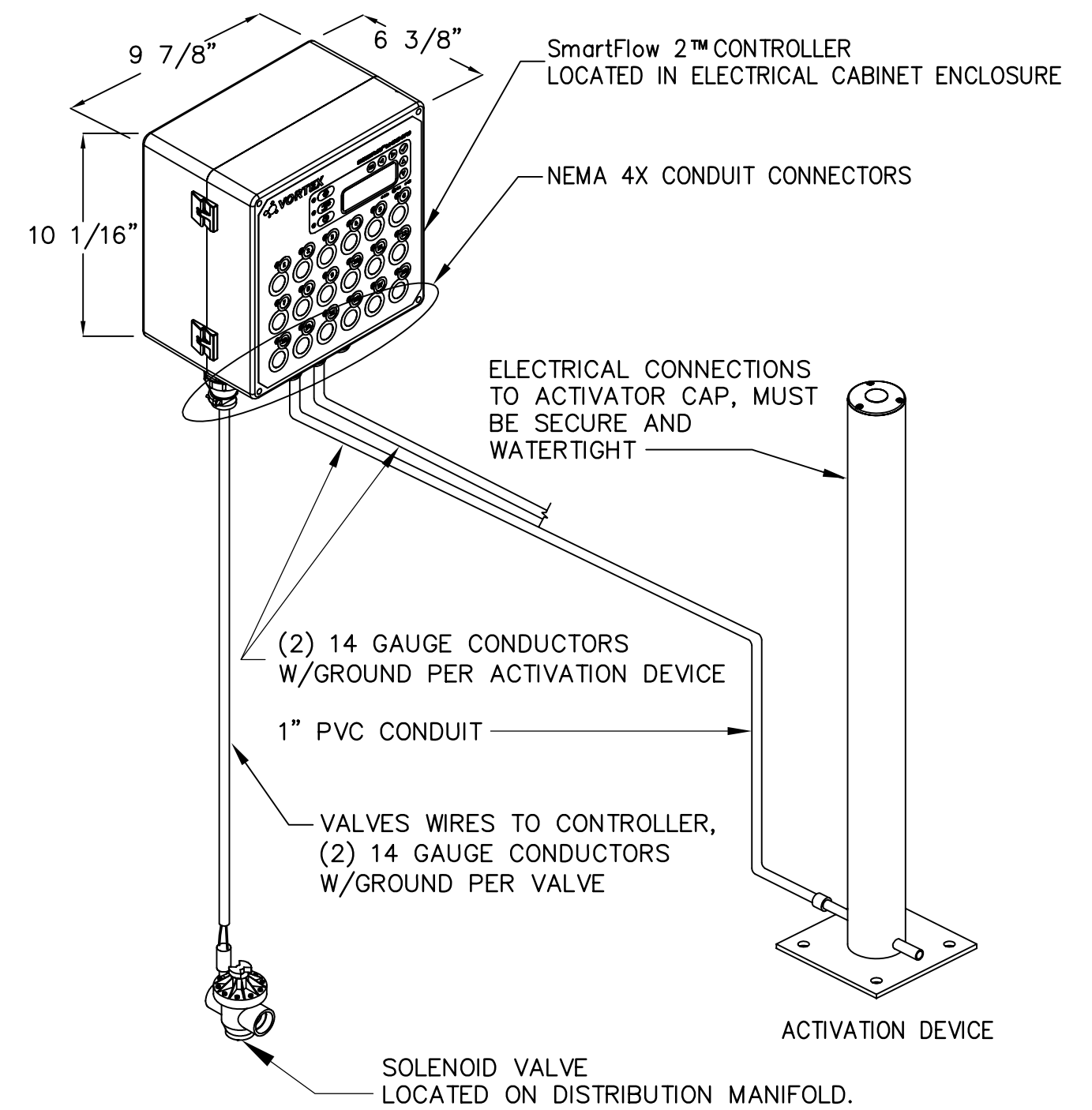
**4 SAFESWAP ANCHORING SYSTEM INSTALLATION DETAIL**  
SCALE 1"=1'-0"



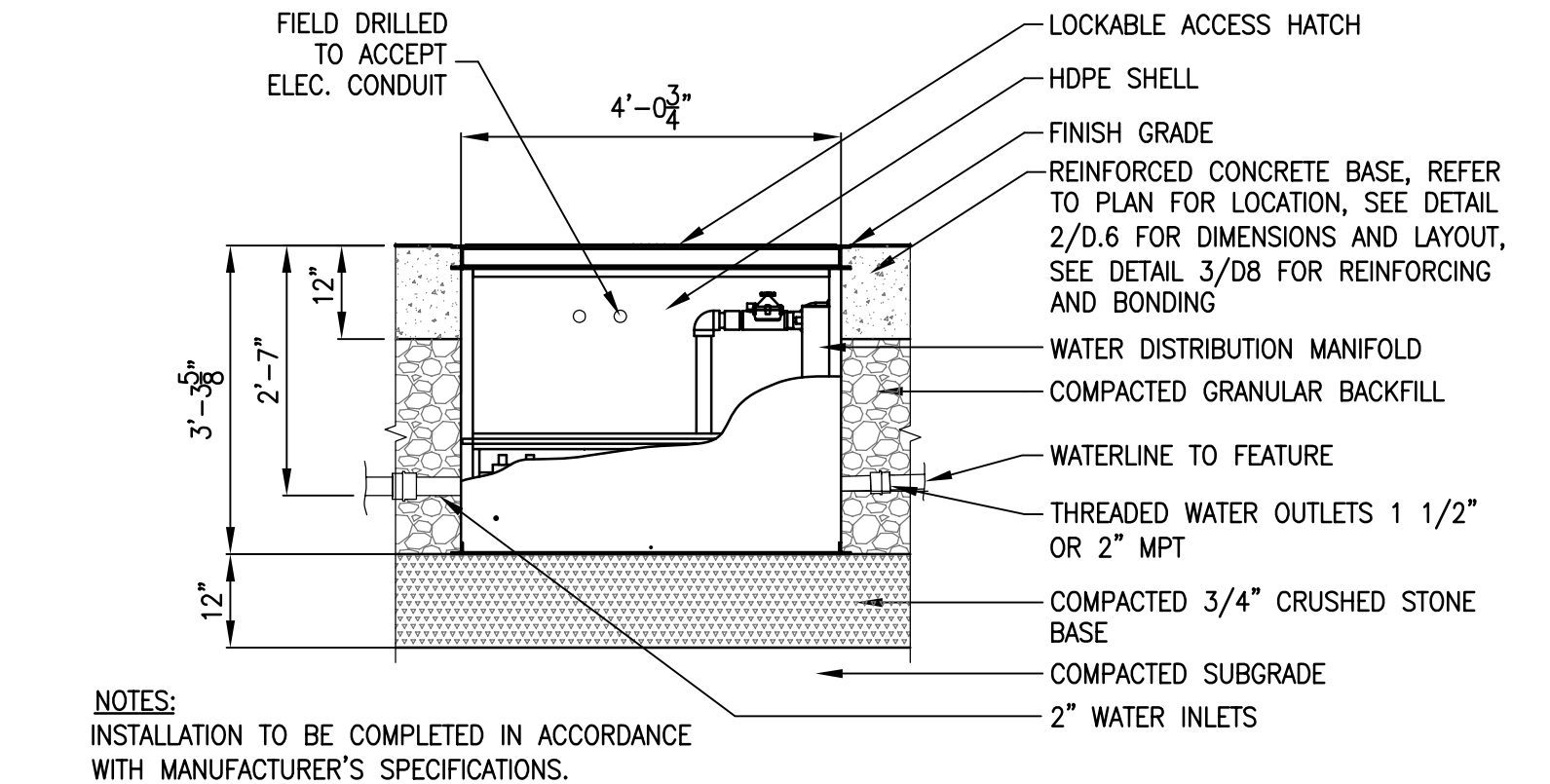
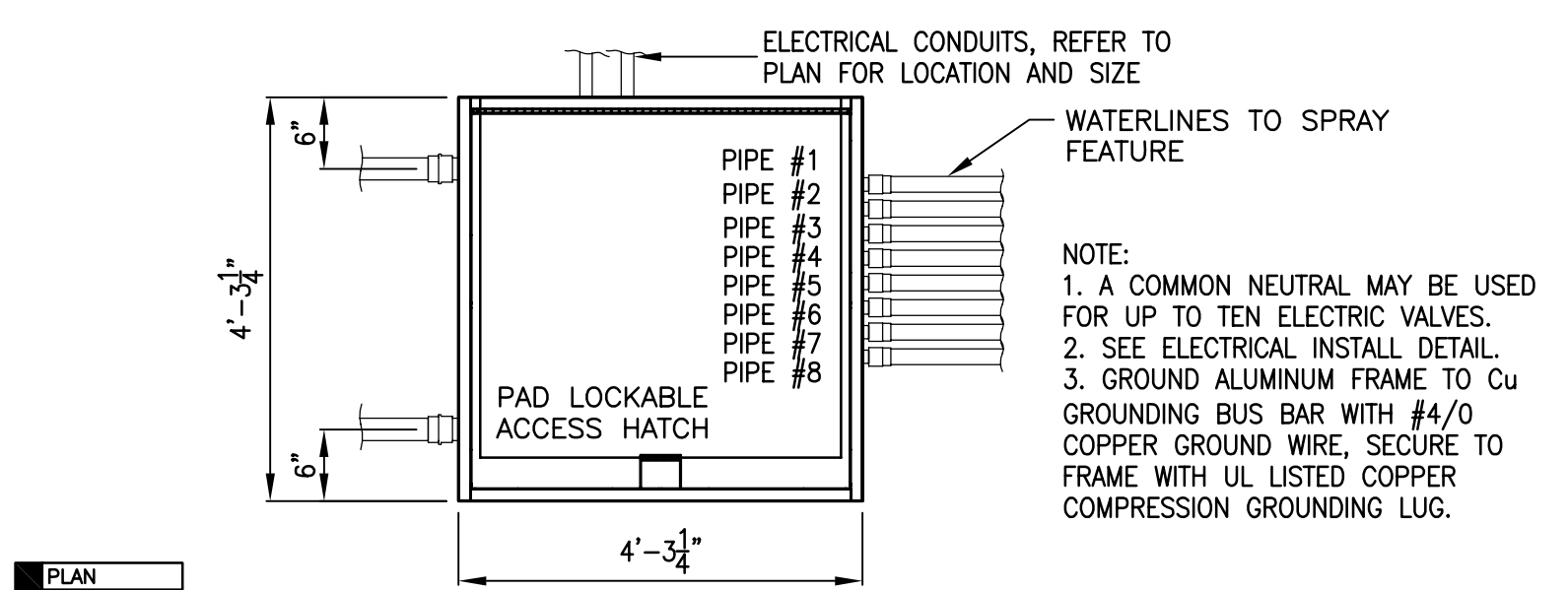
PLAN



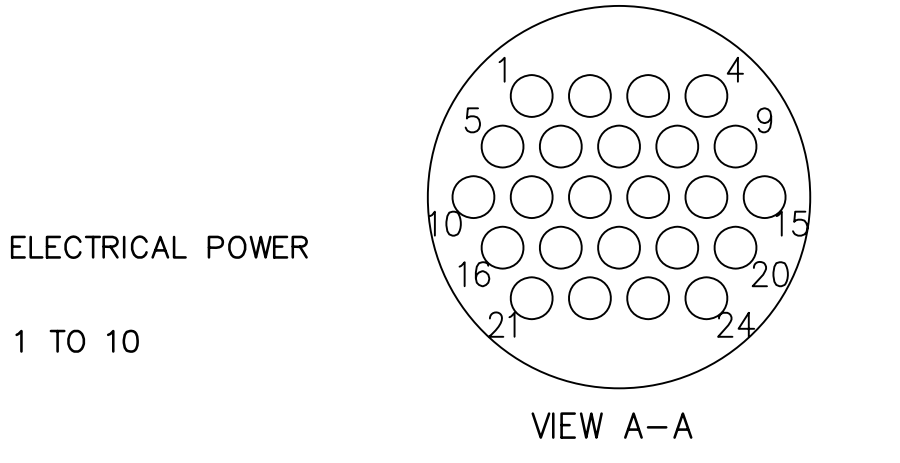
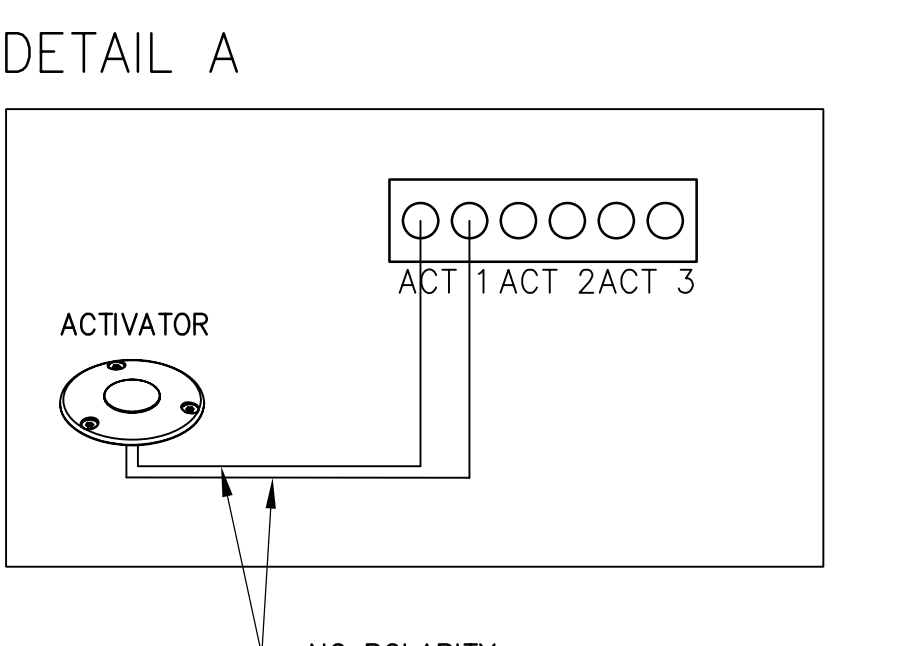
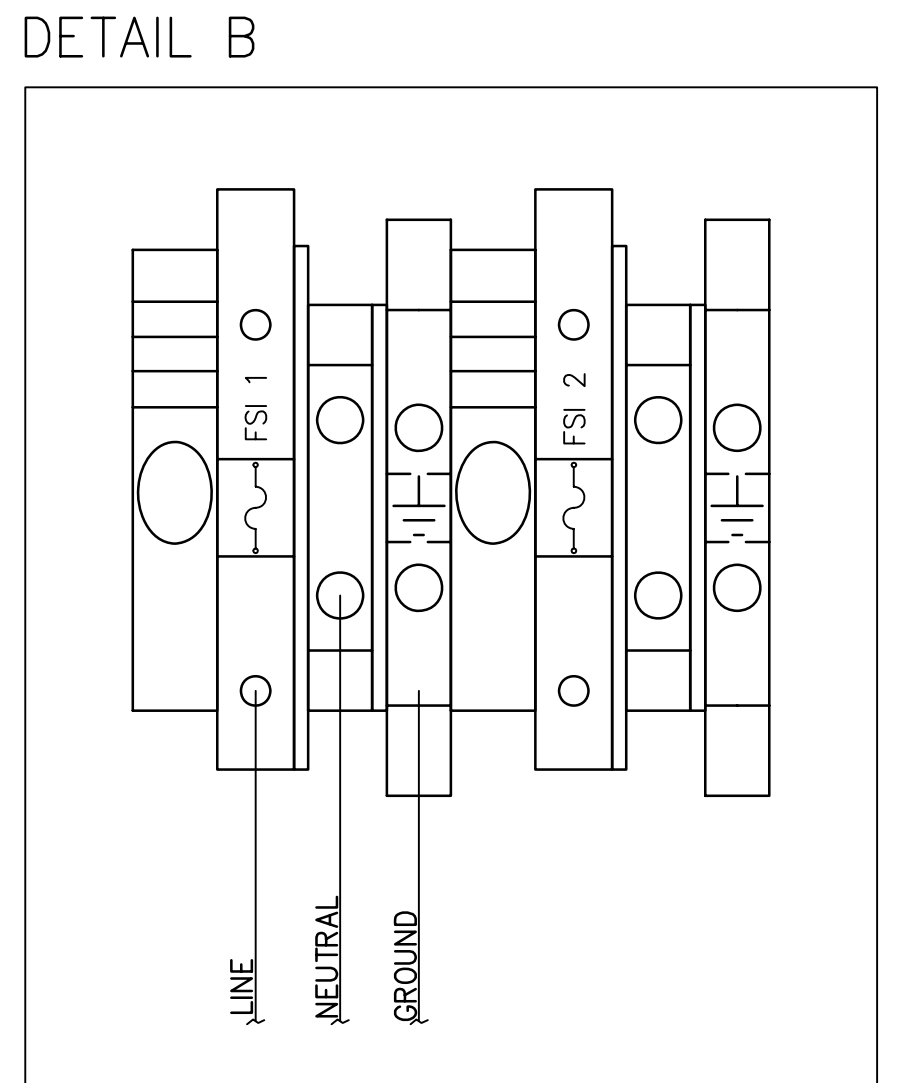
**5 DIRECTIONAL WATER JET INSTALLATION DETAIL**  
SCALE 1"=1'-0"



**1 SMART FLOW 2 CONTROLLER**  
N.T.S.

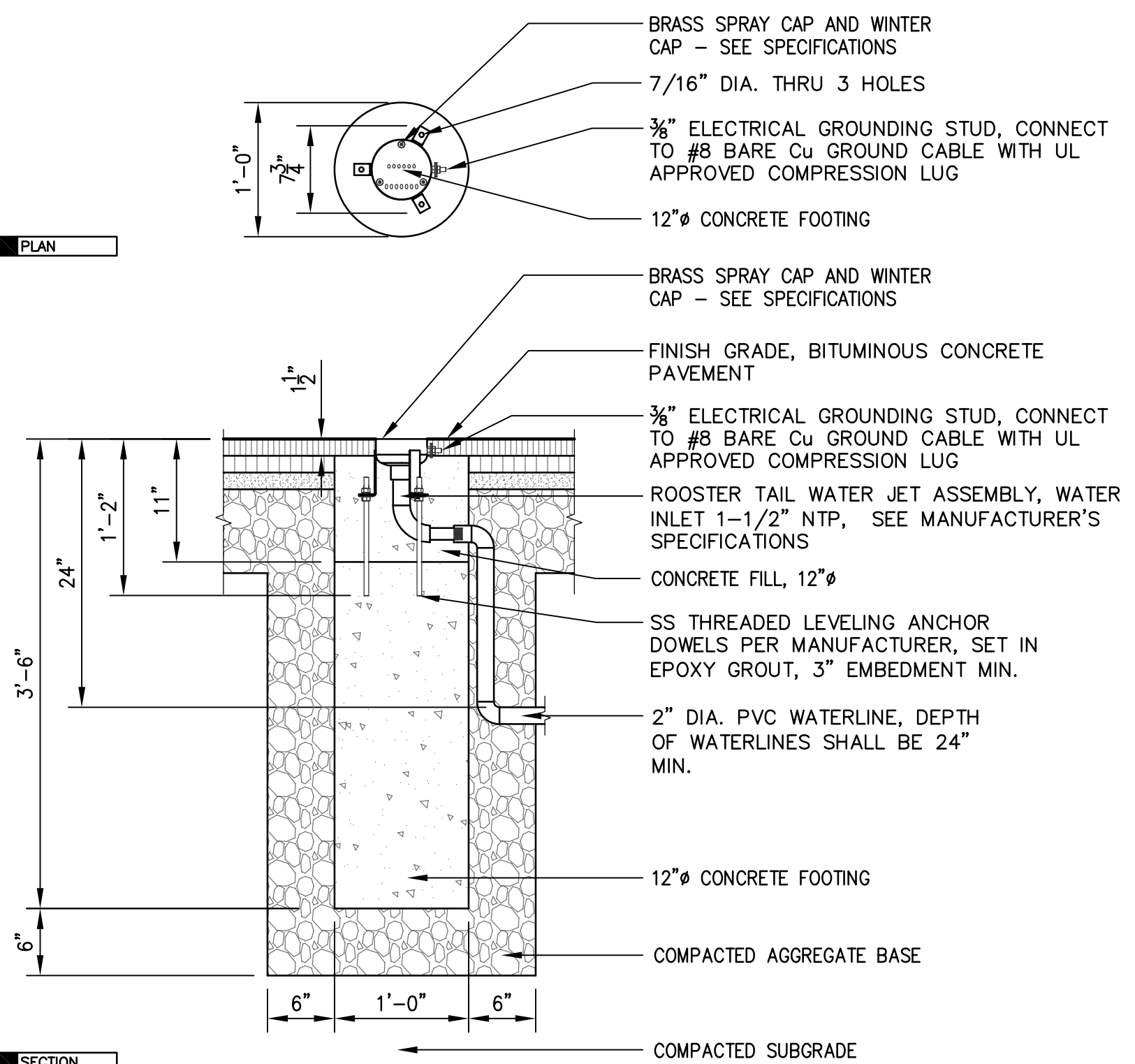


**3 INGROUND EQUIPMENT VAULT INSTALLATION DETAIL**  
SCALE 1/2" = 1'-0"



PIN	CONNECTOR	SIGNAL
1-2	1	OUTPUT 1
3-4	1	OUTPUT 2
5-6	1	OUTPUT 3
7-8	1	OUTPUT 4
9-10	1	OUTPUT 5
11-12	1	OUTPUT 6
13-14	1	OUTPUT 7
15-16	1	OUTPUT 8
17-18	1	OUTPUT 9
19-20	1	OUTPUT 10
21-22	1	RAIN DIVERTER
23-24	1	N/A
1-2	2	OUTPUT 11
3-4	2	OUTPUT 12
5-6	2	OUTPUT 13
7-8	2	OUTPUT 14
9-10	2	OUTPUT 15
11-12	2	OUTPUT 16
13-14	2	OUTPUT 17
15-16	2	OUTPUT 18
17-18	2	OUTPUT 16
19-20	2	OUTPUT 17
21-22	2	OUTPUT 18
23-24	2	N/A

NOTE:  
FSI 1 - TERMINAL FUSE BLOCK  
2 AMPS 120 VAC TYPE GDC-2A  
1 AMPS 240 VAC TYPE GDC-1A  
  
FSI 2 - TERMINAL FUSE BLOCK  
4 AMPS 240 VAC TYPE GDC-4A  
  
ANY ADDITIONAL FIELD HOLES IN THE ENCLOSURE SHALL BE DONE USING NEMA 4X COMPLIANT CONNECTOR. FAILURE TO DO SO WILL VOID THE NEMA 4X OF THE ENCLOSURE.



**2 ROOSTER TAIL WATER JET INSTALLATION DETAIL**  
SCALE 1"=1'-0"

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Shrewsbury, MA 01545-0608  
(508) 632-9382  
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Electrical Engineering, Power, Lighting, Technical Studies and Utility Consulting

No.	Description	Date

REVISIONS

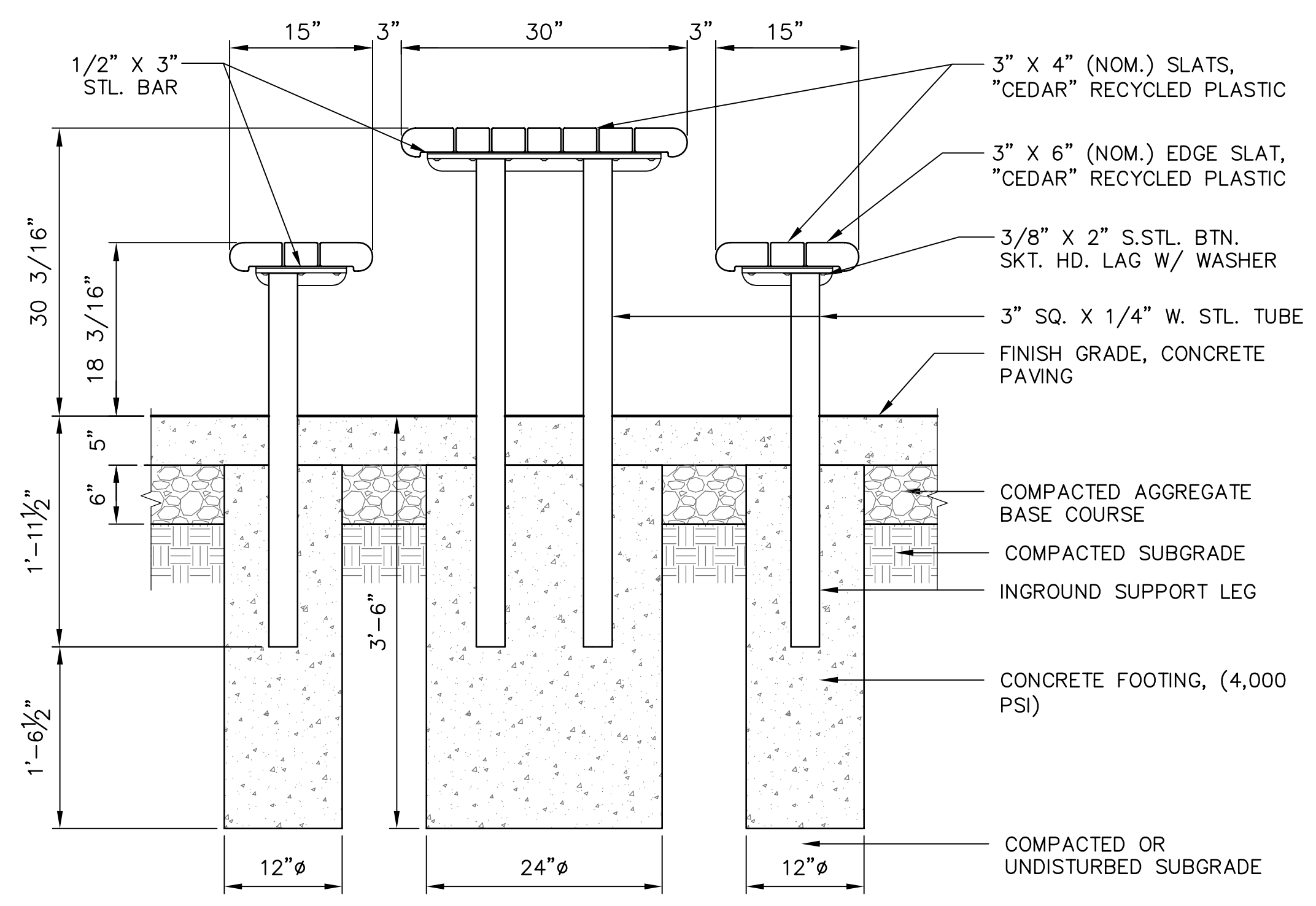
Project:  
**FITCH SPRAY PARK**  
14 ASH STREET  
WALTHAM, MA 02453

Prepared For:  
**WALTHAM PLANNING DEPARTMENT**  
119 SCHOOL STREET  
WALTHAM, MA 02451

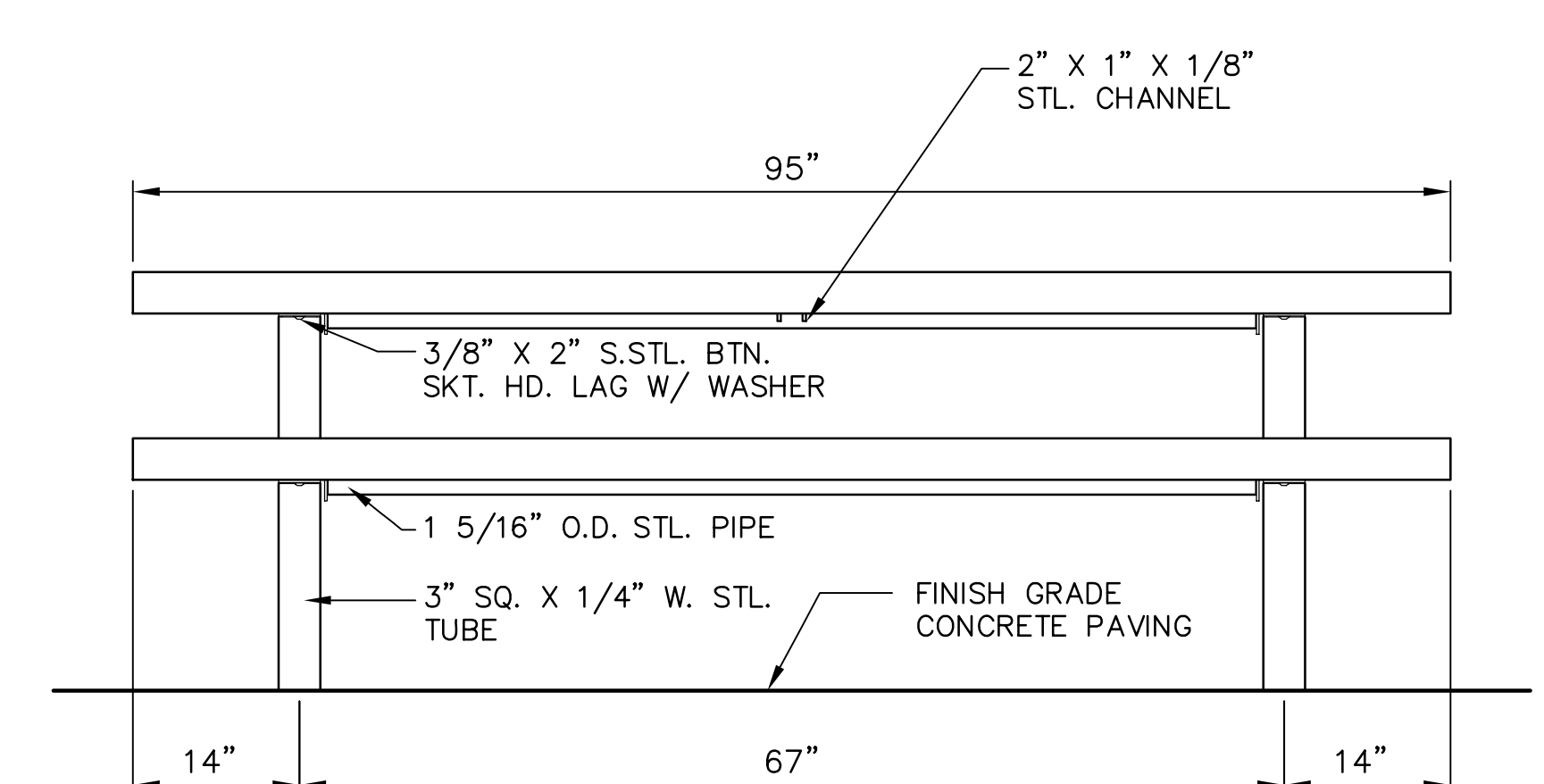
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**SPRAY FEATURE DETAILS**

Scale AS NOTED Date MAR 14, 2011  
Drawn By DRB  
Checked By CCC  
Approved By CCC  
Project No. 1021.00

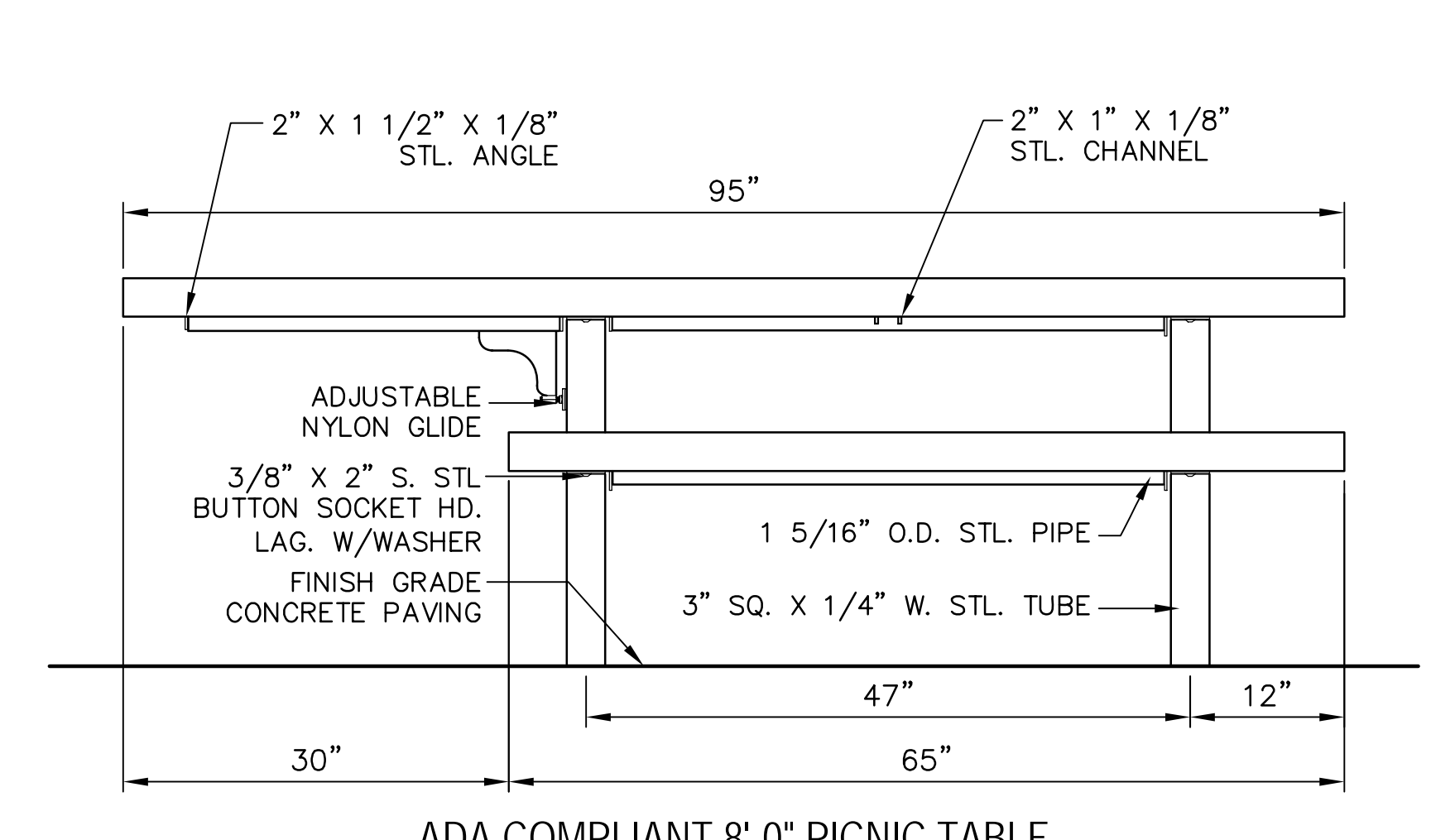
DWG No. **D.4**



SIDE ELEVATION

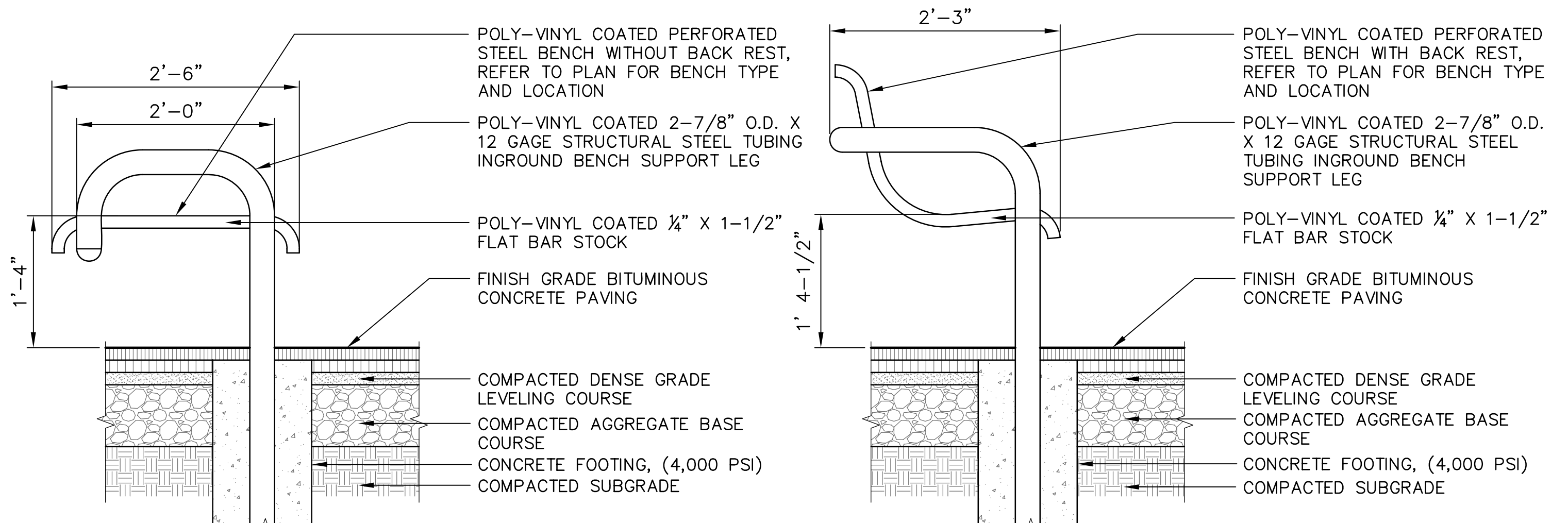


FRONT ELEVATION

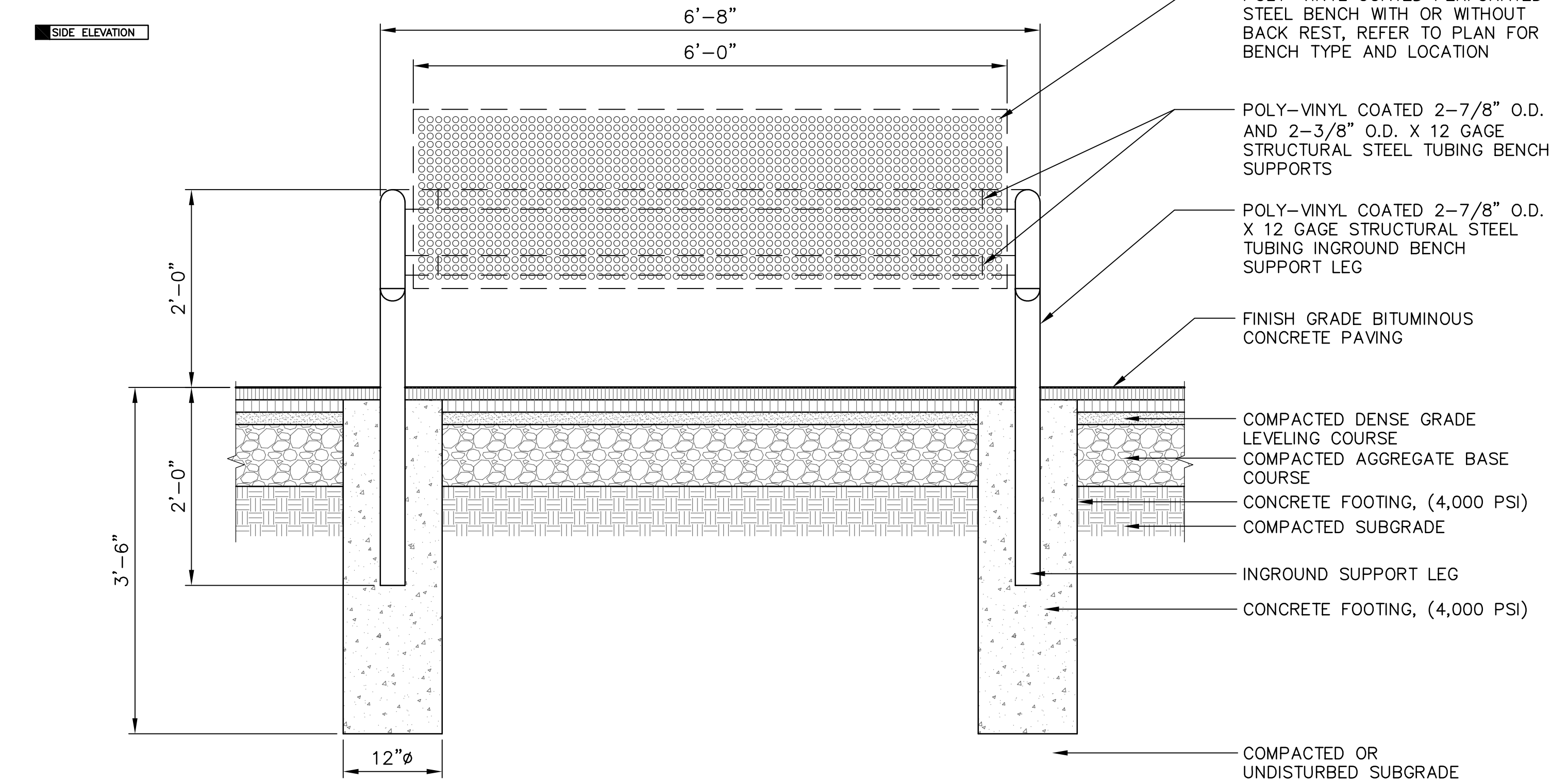


FRONT ELEVATION

**3** 95" RECTANGULAR RECYCLED PLASTIC PICNIC TABLE INSTALLTION DETAIL, TYP. (ADD ALTERNATE #1)  
SCALE 1"=1'-0"

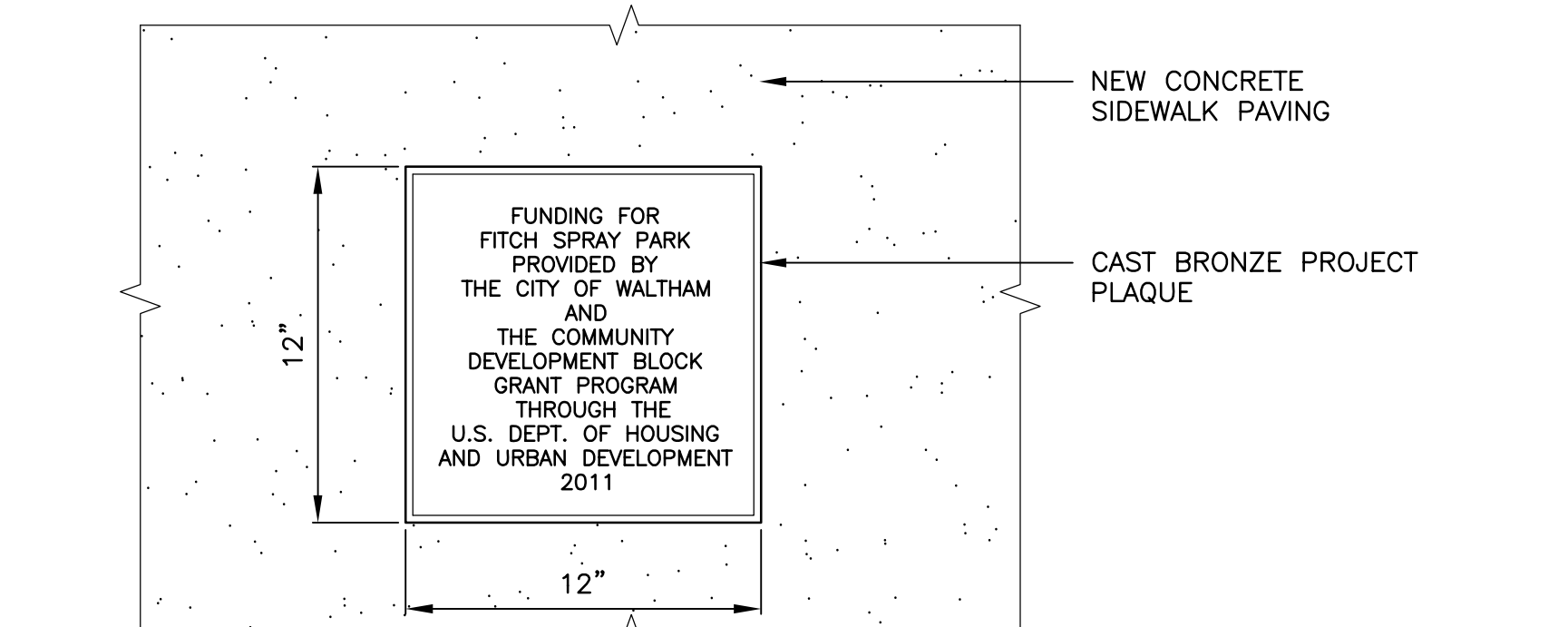


SIDE ELEVATION

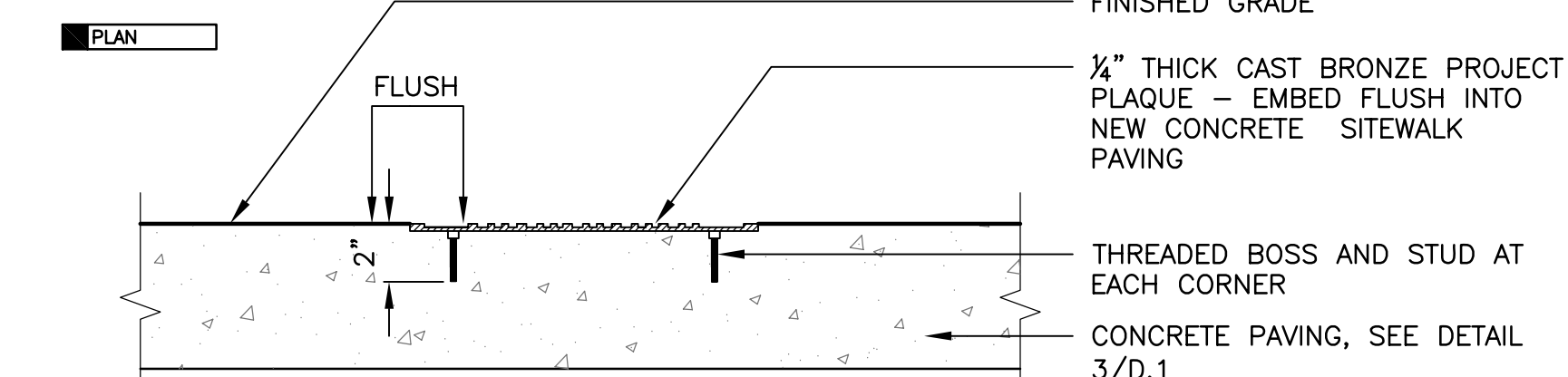


FRONT ELEVATION

**1** BENCH INSTALLATION DETAIL, TYP.  
SCALE 1"=1'-0"



PLAN



SECTION

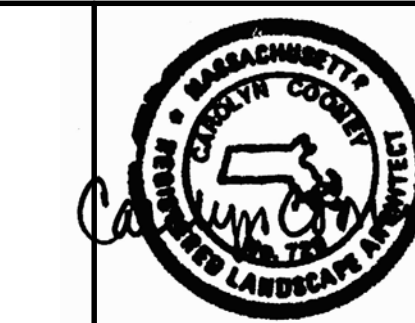
**2** CAST BRONZE PROJECT PLAQUE  
N.T.S.

**Carolyn Cooney & Associates**  
Landscape Architecture / Planning  
19 Elm Street, Millis, MA 01957  
Telephone 508 478 8426, Facsimile 508 478 8607

**Site Engineering Consultants, Inc.**  
55 Grape Shot Road  
Sharon, Massachusetts 02067  
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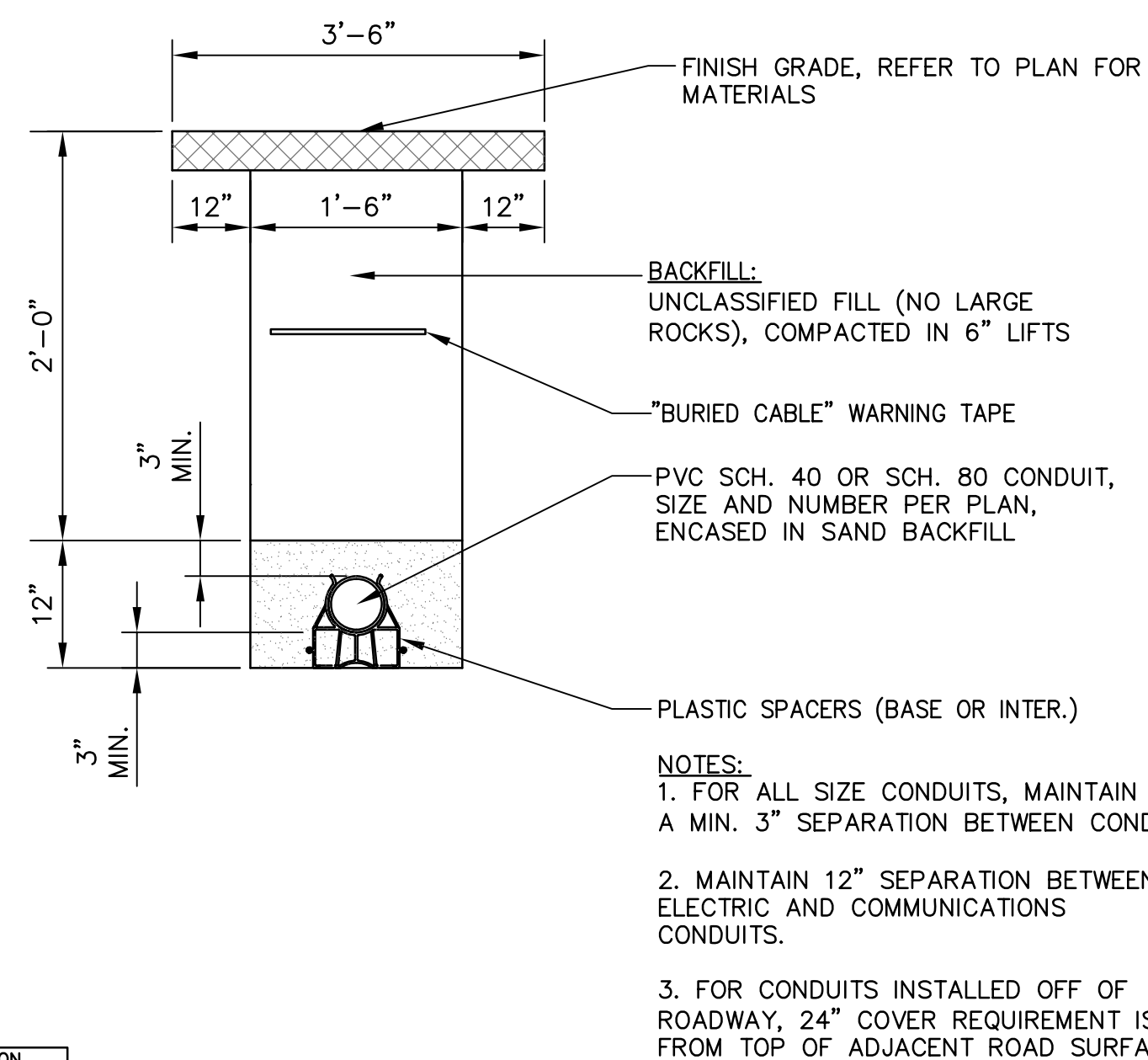
Project:  
**FITCH SPRAY PARK  
14 ASH STREET  
WALTHAM, MA 02453**

Prepared For:  
**WALTHAM PLANNING  
DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MA 02451**

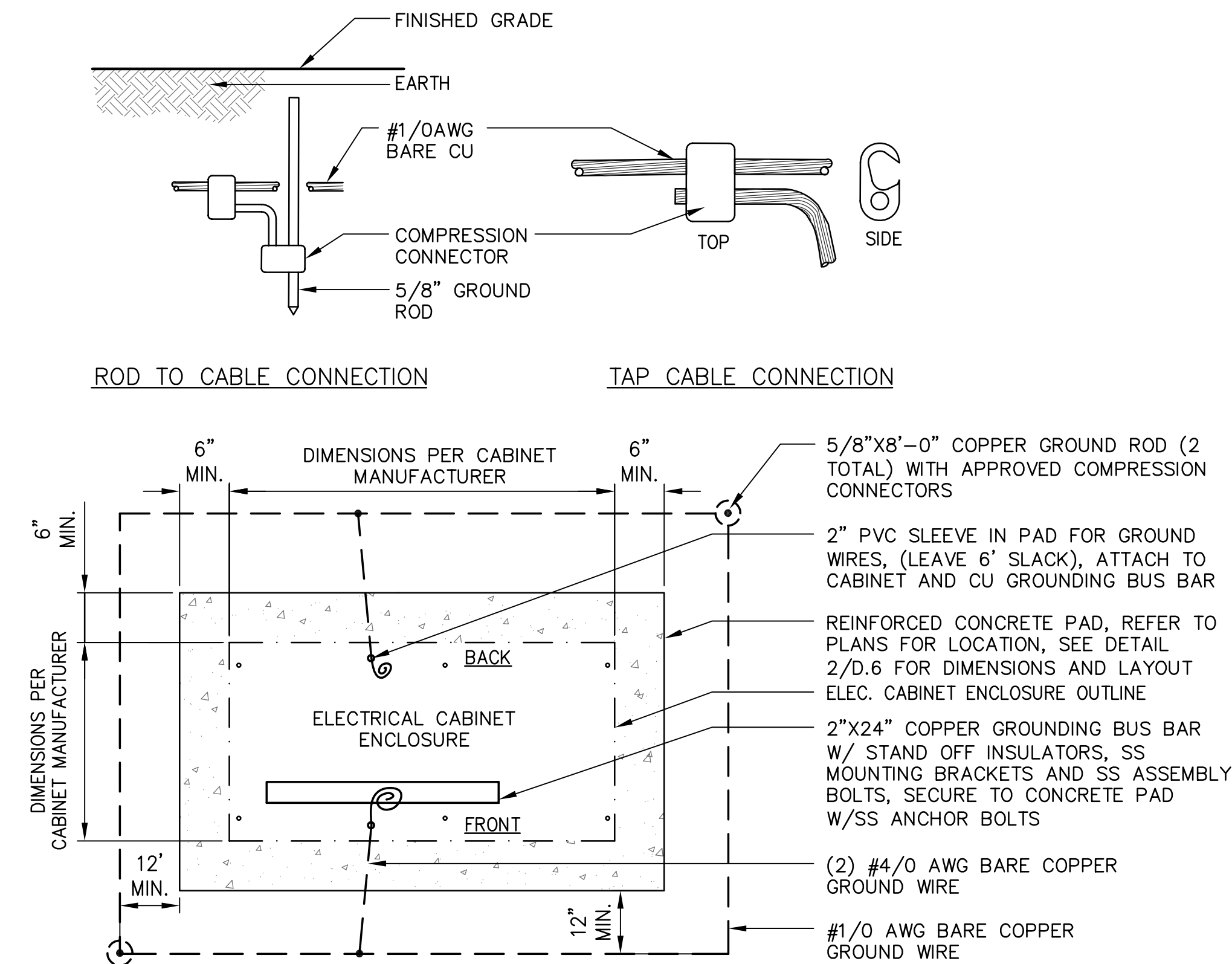
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**DETAILS**

Scale AS NOTED Date MAR 14, 2011  
Drawn By DRB  
Checked By CCC  
Approved By CCC  
Project No. 1021.00

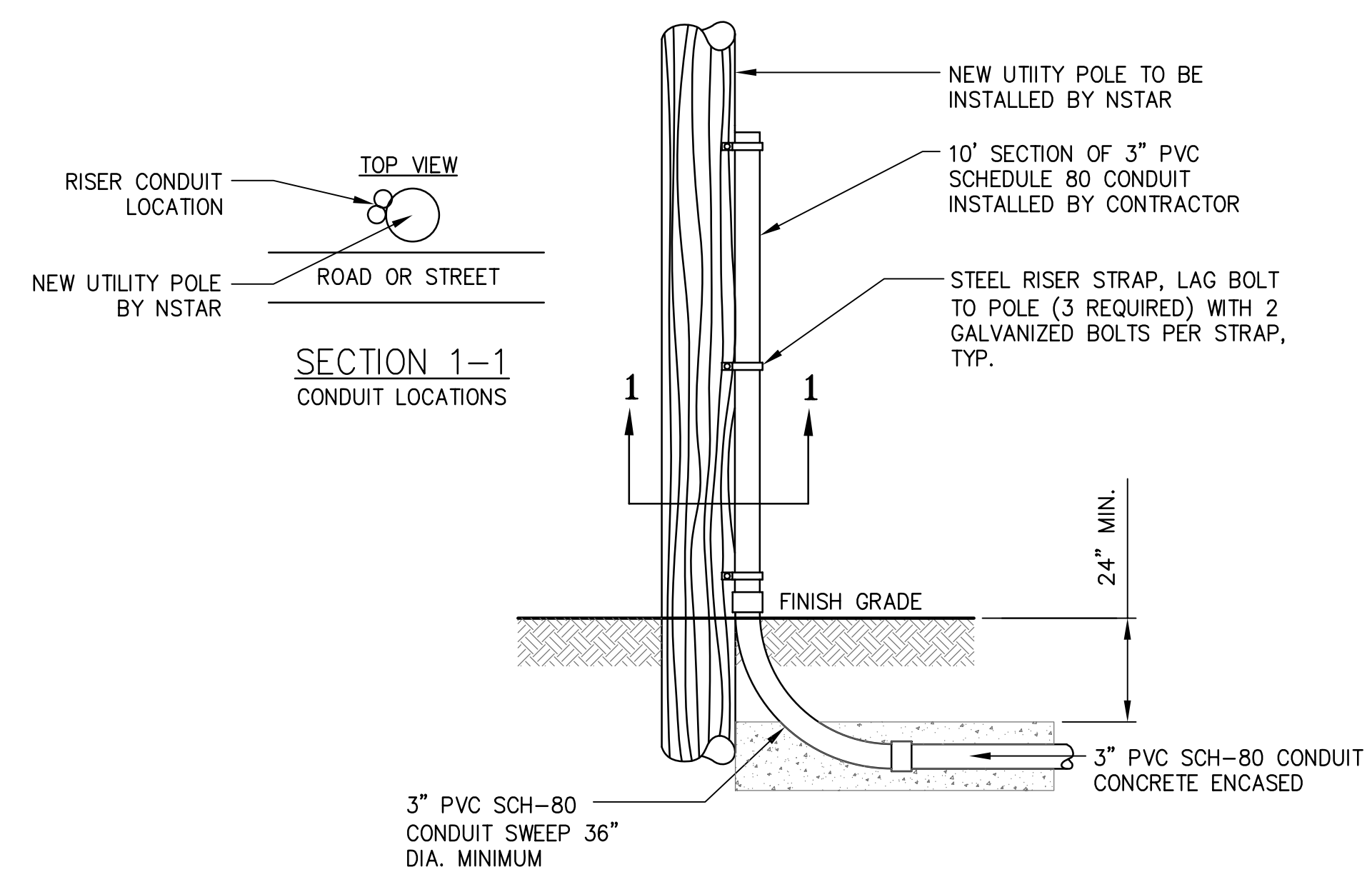
DWG No. **D.3**



**SECTION**  
**3** CONDUIT DUCTBANK CROSS-SECTION DETAIL  
 N.T.S.



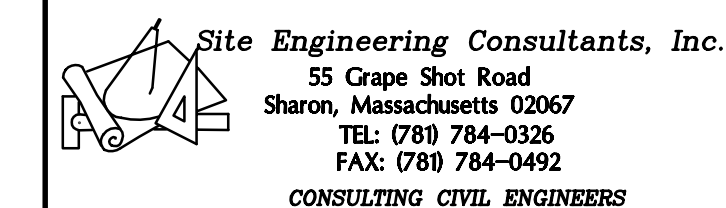
**PLAN**  
**1** ELECTRICAL SERVICE CABINET - GROUNDING PLAN  
 N.T.S.



**ELEVATION**  
**2** RISER POLE CONDUIT FASTENING DETAIL - NEW ELECTRICAL SERVICE  
 N.T.S.

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 19 Elm Street, Milford, MA 01757  
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 Technical Studies and Utility Consulting

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Project:

**FITCH SPRAY PARK  
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 WALTHAM, MA 02453**

Prepared For:

**WALTHAM PLANNING  
 DEPARTMENT  
 119 SCHOOL STREET  
 WALTHAM, MA 02451**

TITLE:

**ELECTRICAL AND  
 GROUNDING DETAILS**

Scale AS NOTED Date MAR 14, 2011  
 Drawn By DRB  
 Checked By CCC  
 Approved By CCC  
 Project No. 1021.00

DWG No. **E.3**