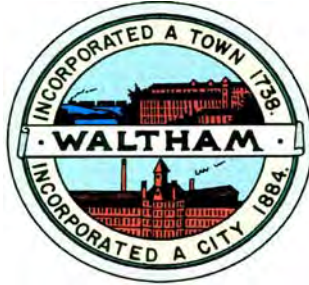


# *The City of Waltham*



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

**IMPROVEMENTS TO THE POND END TOT LOT,**  
*93 Winter Street, Waltham, MA 02452*

The GENERAL BID is due: **Friday June 27, 2014 at 11:00 am**

PRE BID Meeting and Briefing on Site: **Friday June 20, 2014 at 1:00 pm**  
**(Meet at 93 Winter Street, Waltham)**

Last Day for Written QUESTIONS: **12 noon Monday June 23, 2014**

**SECTION 00050  
CITY OF WALTHAM  
MASSACHUSETTS**

**NOTICE TO BIDDERS**

**IMPROVEMENTS TO POND END TOT LOT  
93 WINTER STREET, WALTHAM, MASSACHUSETTS**

Under the rule of M.G.L. Chapter 30, 39M the City of Waltham, Massachusetts invites sealed bids from Contractors for the Improvements to Pond End Tot Lot at 93 Winter Street, Waltham, Massachusetts. The work includes site demolition and preparation, walkway improvements, drainage, safety surface, edging, site improvement, fencing, play equipment, plantings and grasses.

**PLANS, SPECIFICATIONS** and other Contract Documents may be obtained by visiting the City's Web Site at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids)

Copies of Addenda will be e- mailed to the registered Bidders without charge. Addenda will also be posted on the web site above

Sealed **GENERAL BIDS** for this project will be accepted from eligible bidders at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02451 until **11:00 AM Friday June 27, 2014**, at which place and time they shall be publicly opened, read aloud and recorded for presentation to the Awarding Authority.

A **PRE-BID CONFERENCE** will be held for all interested parties at **1:00 PM Friday June 20, 2014** at the site **93 Winter Street, Waltham, MA**. Attendance at this pre-bid conference is strongly recommended, but it is not required, for parties submitting a bid. It will be the only opportunity to visit the site prior to the bid opening.

Each general bid, and each sub-bid shall be accompanied by a bid deposit in the form of a bid bond, certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the City of Waltham in the amount of five percent (5%) of the value of the bid. Bid deposits will be dealt with as provided in Massachusetts General Laws, Chapter 149, Section 44B.

Bids shall be made on the basis of the Minimum Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of Chapter 149, Sections 26 to 27D inclusive of Massachusetts General Laws, a copy of which is attached to and is made a part of the Contract.

Bidders' selection procedures and contract award shall be in conformity with applicable statutes of the Commonwealth of Massachusetts.

Performance and Labor and Materials payment bonds in the full amount of 50% of the contract price will be required from the successful bidder.

The Awarding Authority reserves the right to reject any or all general bids, if it be in the public interest to do so, and to reject any sub-bid on any sub-trade if it determines that such sub-bid does not represent the sub-bid of a person competent to perform the work as specified or that less than three such sub-bids were received and that the prices are not reasonable for acceptance without further competition.

The successful bidder will be required to furnish a Certificate of Insurance, naming the City of Waltham as an Additional Named Insured with a waiver of subrogation, 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.

In accordance with M.G.L.Ch 30- 39M 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.

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

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

CITY OF WALTHAM

Joseph Pedulla, CPO  
Purchasing Department  
City Hall, 610 Main Street  
Waltham, MA 0245.

## **SECTION 00100 - INSTRUCTION TO BIDDERS**

### **PART 1 - GENERAL**

#### **1.1 SCHEDULE OF DATES**

- A. Advertisement appears in Central Register, Plans and Specifications ready for Bidders at the Offices of the Waltham Purchasing Agent after 8:30 P.M. on June 11, 2014.
- B. **Pre-bid** walkthrough will be held at 1:00PM **Friday June 20, 2014. Meet at 93 Winter Street**
- C. Questions and requests for interpretations may be submitted in writing via e-mail ONLY to [Jpedulla@city.waltham.ma.us](mailto:Jpedulla@city.waltham.ma.us) up to and including: **June 23 , 2014, 12:00 Noon.**
- D. Addenda will be issued with interpretations as determined by the Purchasing Department only via e-mail and posting on the web site.
- E. General Bids Deadline: **11:00 A.M. on Friday June 27, 2014**, in the Purchasing Department, City Hall, 610 Main Street, Waltham, MA 02452, Attn: J. Pedulla, CPO, where the bids will be publicly open and read.

#### **1.2 BIDDING PROCEDURE**

- A. Bids for the work are subject to the provisions of General Laws, Chapter 30, 39M, inclusive, as amended. Regulations governing the bidding procedures as set forth in the above mentioned amended General Laws must be followed.
- B. In the event of any inconsistencies between any of the provisions of these Contract Documents and of the cited statute, anything herein to the contrary notwithstanding, the provisions of the said statute shall control.
- C. No General Bid received by the Awarding Authority after the time respectively established herein for the opening of General Bids will be considered, regardless of the cause for the delay in the receipt of any such bid.

#### **1.3 WITHDRAWAL OF BIDS**

- A. Bids may be withdrawn prior to the time respectively established for the opening of General Bids only on written request to the Awarding Authority.

#### 1.4 INTERPRETATION OF CONTRACT DOCUMENTS

- A. No oral interpretation will be made to any bidder. All questions or requests for interpretations must be made in writing to the Architect.
- B. Every interpretation made to a bidder will be in the form of an Addendum to the drawings and/or specifications, which will be made available to all persons to whom Contract Documents have been issued.
- C. Failure of the Awarding Authority to send, or of any bidder to receive any such Addendum shall not relieve any bidder from obligation under his bid as submitted.
- D. All such Addenda shall become a part of the Contract Documents.

#### 1.5 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. Each bidder shall visit the site of the proposed work and fully acquaint himself with conditions as they exist, and shall also thoroughly examine the Contract Documents. Failure of any bidder to visit the site and acquaint himself with the Contract Documents shall not relieve any bidder from any obligation with respect to his bid.
- B. By submitting a bid, the bidder agrees that the Contract Documents are adequate and that the required result for a full and complete installation can be produced. The successful bidder shall furnish any and all labor, materials, insurance, permits and all other items needed to produce the required result to the satisfaction of the Awarding Authority.

#### 1.6 BID SECURITY

- A. The General Contractor's bid must be accompanied by bid security in the amount of five percent (5%) of the bid.
- B. At the option of the bidder, the security may be bid bond, certified, treasurer's or cashier's check issued by a responsible bank or trust company. No other type of bid security is acceptable.

Bid Bonds shall be issued by a Surety Company qualified to do business under the laws of the Commonwealth of Massachusetts.

- C. Certified, Treasurer's or Cashier's check shall be made payable to the City of Waltham, Massachusetts.
- D. The bid security shall secure the execution of the Contract and the furnishing of a Performance and Payment Bond by the successful General Bidder for 100% of the contract value.
- E. Should any General Bidder to whom an award is made fail to enter into a contract therefore within five (5) days, Saturdays, Sundays and Legal Holidays, excluded, after

notice of award has been mailed to him or fail within such time to furnish a Performance Bond and also a Labor and Materials or Payment Bond as required, the amount so received from such General Bidder through his Bid Bond, Certified, Treasurer's or Cashier's check as bid deposit shall become the property of the City of Waltham, Massachusetts as liquidated damages; provided that the amount of the bid deposit, which becomes the property of the City of Waltham, Massachusetts, shall not in any event exceed the difference between his bid price and the bid price of the next lowest responsible and eligible bidder; and provided further that, in case of death, disability, bona fide clerical error or mechanical error of a substantial nature, or other unforeseen circumstances affecting the General Bidder, his deposit shall be returned to him.

#### 1.7 BID FORM

- A. General Bids shall be submitted on the "FORM FOR GENERAL BID" enclosed. Erasures or other changes must be explained or noted over the signature of the bidder.
- B. Bid forms must be completely filled in. Bids which are incomplete, conditional, or obscure, or which contain additions not called for will be rejected.
- C. General Bidders shall submit one set of executed bid forms to the Awarding Authority.

#### 1.8 SUBMISSION OF BIDS AND BID SECURITIES

- A. Each bid submitted by a General Contractor shall be enclosed in a sealed envelope that shall be placed with the bid security in an outer envelope. The outer envelope shall be sealed and clearly marked as follows:

(Firm Name): \_\_\_\_\_  
General Bid and Bid Security for:  
Pond End Tot Lot

#### 1.9 AWARD OF CONTRACT

- A. The Contract shall be awarded to the lowest responsible and eligible General Bidder on the basis of competitive bids in accordance with the General Laws of the Commonwealth of Massachusetts.
- B. If the bidder selected as the General Contractor fails to perform his agreement to execute a contract in accordance with the terms of his General Bid, and furnish a Performance Bond and also a Labor and Materials or Payment Bond, as stated in his General Bid in accordance with Section 44F, an award shall be made to the next lowest responsible and eligible bidder.
- C. The words "lowest responsible and eligible bidder" shall be the bidder whose name is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work and who shall certify that he is able to furnish labor

that can work in harmony with all other elements of labor employed, or to be employed, on the work. Essential information in regard to such qualifications shall be submitted in such form as the Awarding Authority may require.

- D. Action on the award will be taken within sixty (60) days, Saturdays, Sundays and Legal Holidays excluded after the opening of the bids.

#### 1.10 SECURITY FOR FAITHFUL PERFORMANCE

- A. The successful bidder must deliver to the Awarding Authority simultaneously with his delivery of the executed contract, an executed Performance Bond, and also a Labor and materials or Payment Bond, each issued by a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of One Hundred Percent (50%) of the Contract Price, as surety for the faithful performance of his contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. Said bonds shall provide that, if the General Contractor fails or refuses to complete the Contract, the Surety Company will be obligated to do so.
- B. Premiums are to be paid by the General Contractor, and are to be included in the Contract Price.

#### 1.11 EQUAL OPPORTUNITY

- A. The City of Waltham is an Equal Opportunity employer and will require compliance with the minority business enterprise plan (MBE) on file in the Purchasing Department

#### 1.12 PRE-BID WALK-THRU

- A. A pre-bid conference will be held at the site on **Friday June 20, 2014, at 1:00 PM..** Interested parties are encouraged to attend given that this will be the only time the building is open prior to the submission of bids. Further, prior to the bid opening, potential bidders may not go onto the site any time other than the aforementioned pre-bid conference.

#### 1.13 SITE VISITS

- A. Prospective bidders are prohibited from going onto the site prior to the Bid Opening or any time other than the pre-bid walk-thru, as set forth in Section 1.12 above, unless authorized by the Architect in an Addendum to the bid documents.

#### 1.14 CONTRACT DOCUMENTS

- A. The Awarding Authority shall make available the bid documents and addenda in the City Web site at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids). No plans will be mailed.

1.15 EQUALITY

- A. Except where otherwise specifically provided to the contrary, the words “or approved equal” are hereby inserted immediately following the name or description of each article, assembly, system, or any component part thereof in the Contract Documents. It is the Contractor’s responsibility to provide all the research and documentation that would prove a product or assembly is “equal”. Failure to provide research or documentation does not alleviate the Contractor’s responsibility to meet the schedule.

1.16 TAX FREE NUMBER

- A. The City of Waltham has a tax-free number.

1.17 SCHEDULE

- A. The work of the Contract shall be Substantially Complete in **105 calendar days** after the date of the Notice-to-Proceed.

1.18 LATE PENALTY FEES

- A. If the work is not Substantially Complete as specified in 1.17, the Contractor shall be charged Five Hundred Dollars (\$500.00) per day to pay for consulting and testing fees required to manage and arrange for the completion of the project. Late fees will be deducted from the Contract via Change Order.

1.19 WEEKLY JOB MEETINGS

- A. There will be a weekly job meeting at the site on the same agreed-upon day and time. Time will be provided to discuss and view the progress of the work and to answer questions. The Contractor’s job Superintendent and Project Manager shall attend each meeting. The City reserves the right to have job meetings conducted in the Planning Department at 119 School Street, Waltham.

1.20 PROJECT SUPERINTENDENT

- A. The Contractor shall provide the same person as Superintendent for the entire duration of the project. Failure to maintain the same person in this position shall result in a One Thousand Dollar (\$1,000.00) penalty per incident which shall cover the Architect’s time to re-orient new personnel.

1.21 AWARD

- A. The Awarding Authority reserves the right to reject any or all bids if it be in the public interest to do so, and to act upon the bids and make its award in any lawful manner.

1.22 PREVAILING WAGE SCHEDULE

- A. Bids shall be made on the basis of the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provision of Chapter 149, Section 26 to 27D inclusive, of the Massachusetts General Laws. The Prevailing wage Schedule for this project can be found in the City's web Site at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids)

1.23 CONFLICT OF INTEREST

- A. A bidder filing a proposal thereby certifies that the proposal is made in good faith, without fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is competing solely on its own behalf without connection with, or obligation to, any undisclosed person or firm.

1.24 PROCEED ORDERS

- A. No bidder is to proceed without a proceed order as set out in the contract.

1.25 STAGING

- A. The General Contractor shall provide all the vertical access (which includes staging, vertical lifts, etc.) for the work of the Contract for the General Bidder and his/her non File Sub-bid subcontractor. **Exception:** ALL File Sub-Bidders shall provide ALL their own staging, vertical access, and hoisting necessary to perform their own work.

1.26 COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS

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

1.27 CONSTRUCTION BARRICADES

- A. The General Contractor shall provide all barricades to enclose the work area to prevent unauthorized access to the site.
  - 1. The barricades shall provide enough room for all construction activities to be performed while separated from pedestrians, students, and staff on site.
  - 2. Safety is the sole responsibility of the Contractor and any barricades necessary to protect the work and the public shall be provided.
  - 3. Provide entrance protection.

## 1.28 INSURANCE

- A. The contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.
- B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:

- 1. Statutory Worker's Compensation and Employer's Liability

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker's Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

- 2. Comprehensive General Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person and \$ 1,000,000 per accident, and property damage limits of \$ 500,000 per accident and \$ 1,000,000 aggregate during any 12 month period, shall include the following:

- a. Public liability (bodily injury and property damage)
- b. X.C.U. (explosion, collapse, and underground utilities)
- c. Independent contractor's protective liability.
- d. Products and completed operations.
- e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

- 3. Comprehensive All Risk Motor Vehicle Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person, \$ 1,000,000 per accident, and property damage limit of \$ 1,000,000 per accident.

- 4. All Risk Insurance

Covering all Contractor's equipment with a provision for Waiver of Subrogation against the Owner.

5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of \$ 1,000,000.

6. City of Waltham is a Named Additional Insured for General Liability with a Waiver of Subrogation on the insurance policy for this project.

1.29 SITE ACCESS

A. The General Contractor shall gain access to the site via routes approved by the Owner.

1. The General Contractor as part of the bid price will restore all roads, curbs, driveways, walks and grassed or landscaped areas damaged during construction.

1.30 CONSTRUCTION TRAILER

A. The General Contractor shall locate the construction trailer at locations approved by the Owner.

B. The General Contractor shall locate all on site stored or staged materials within the enclosed area designated by the Owner.

1.31 COMPLETE BID FORMS

A. Please Note: Each bidder must fill in all the blanks on all the bid forms, even if the information is “zero dollars” or “not applicable”. Also, please acknowledge all Addenda even if they do not pertain to your trade.

1.321 READ ALL DOCUMENTS.

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

1.33. FORMS AND ATTACHMENTS.

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

1.34. PRINTED OR TYPED RESPONSE.

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

1.35. CORRECTIONS.

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

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

1.36. PRICE IS ALL INCLUSIVE.

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

1.37. PRICE DISCREPANCY.

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

1.38. EXPLANATIONS, EXCEPTIONS

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

1.39. BID DEPOSITS.

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (20) days of the receipt of said contract, such security shall be retained by the city as liquidated damages. Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

1.40. WITHDRAW.

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

1.41. AWARD.

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

1.42. AWARD CRITERIA.

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

1.43. DISCOUNTS.

Discounts for prompt payments will be considered when making awards.

1.44. TAX EXEMPT.

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

1.45. SAMPLES.

The City of Waltham may require the submission of samples either before or after the awarding of a contract. Samples are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples are required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection of Bid. All samples must be called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

1.46. ACTIVE VENDOR LIST.

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

1.47. FUNDS APPROPRIATION.

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

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

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

1.50. STANDARD OF QUALITY.

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

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

**1.51. MODIFICATION.**

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

**1.52. ASSIGNMENT.**

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

**1.53. DELIVERIES:**

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

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

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

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

**1.54. LABELING.**

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

**1.56. GUARANTEES.**

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

the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

1.57. CHANGE ORDERS.

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

1.58. BID OPENING INCLEMENT WEATHER

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

Signature of Individual or Corporate Name

By:

\_\_\_\_\_  
(Signature of Corporate Officer if applicable)

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

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

**END OF SECTION**

**IMPROVEMENTS TO POND END TOT LOT**

Waltham, MA

**SECTION 00300**

**FORM FOR GENERAL BID**

**IMPROVEMENTS TO POND END TOT LOT**

**WALTHAM, MASSACHUSETTS**

**General Bid Opening Date: 11am Friday, June 27th, 2014**

J. Pedulla, Purchasing Agent  
City of Waltham  
610 Main Street  
Waltham, MA 02452

**A. Basic Price**

The undersigned:

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(Please type or print the business name of the bidding firm)

having visited the site of the above project and having familiarized myself with the local conditions affecting the cost of the work and with the contract documents, including Amendments and Addenda No's. \_\_\_\_\_, hereby proposes to furnish all labor, materials, tools, equipment, insurance, permits and taxes, and to do and lawfully perform all things as provided in the specifications, all in accordance with the contract documents, for the sum of:

**Base Bid (in words)** \_\_\_\_\_ **Dollars, \$** \_\_\_\_\_

**See Section 01030 - Alternates**

**Add Alternate 1 - Guardrail and Clearing** \_\_\_\_\_ **Dollars, \$** \_\_\_\_\_

**PLEASE INCLUDE IN YOUR TOTAL BID PRICE \$1,200.00 POLICE DETAIL ALLOWANCE AS REQUIRED IN THE ALLOWANCE SECTION 01210**

- A. The undersigned agrees that, if s/he is selected as General Contractor, s/he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each issued by a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the General Contractor and are included in the contract price.
- B. The undersigned certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work and that s/he will comply fully with all laws and regulations applicable to awards made.

## IMPROVEMENTS TO POND END TOT LOT

Waltham, MA Milford, MA

- C. The undersigned as Bidder certifies that if this proposal is accepted, s/he will furnish to the City of Waltham with the invoice for the material or equipment supplied two copies of any and all Material Safety Data Sheets applicable to such material or equipment, as required by M.G.L. Chapter 111F, so called "Right to Know Law".
- D. The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. The word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.
- E. Substantial Completion
1. The work of the Contract shall be Substantially Completed in **One hundred and Five (105) calendar** days.
- H. 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.

Sincerely,

\_\_\_\_\_  
(Bidder)

\_\_\_\_\_  
(Address of Bidder)

By:

\_\_\_\_\_  
(Title - Owner\*, Partner\*)

(Seal, if Corporation)

By:

\_\_\_\_\_  
(If Corporation - Name and Office)

\* If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.

## 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 five (5) 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.
- C. An experienced bidder shall be construed to mean that the bidder has an individuals within his/her organization with the experience to supervise a job of this nature. In addition, the bidder shall have within his/her organization, or within his/her sub-contractor's organization, an individual who has previously installed and supervised the installation of play equipment.

In the event the bidder fails, refuses, or neglects to submit any required 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 owner, 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.

---

---

---

---

Bidder's Signature

---

Date

**PERFORMANCE BOND**

CITY OF WALTHAM, MA

**Improvements to Pond End Tot Lot**

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:  
IMPROVEMENTS TO POND END TOT LOT, 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 out 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 out 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:

	_____
	(CONTRACTOR)
	(SEAL)
NAME _____	BY _____
	(SIGNATURE AND TITLE)
ADDRESS _____	_____
	(SURETY)
(SEAL)	
NAME _____	BY _____
	(SIGNATURE AND TITLE)
ADDRESS _____	BY _____
	(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

**Improvements to Pond End Tot Lot**

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 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: IMPROVEMENTS TO POND END TOT LOT 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 out 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:

	_____
	(CONTRACTOR)
	(SEAL)
NAME _____	BY _____
	(SIGNATURE AND TITLE)
ADDRESS _____	_____
	(SURETY)
(SEAL)	
NAME _____	BY _____
	(SIGNATURE AND TITLE)
ADDRESS _____	BY _____
	(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.

## **COMPLIANCE FORMS**

**(PLEASE COMPLETE AND SUBMIT THESE FORMS WITH YOUR RESPONSE)**

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

## **CERTIFICATE OF NON-COLLUSION**

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

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

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

---

## **TAX COMPLIANCE CERTIFICATION**

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

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

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

### **NOTE**

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

## **CERTIFICATE OF VOTE OF AUTHORIZATION**

Date:

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

VOTED: That \_\_\_\_\_ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seal, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

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

SIGNED:

(Corporate Seal)

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

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

---

### COMMONWEALTH OF MASSACHUSETTS

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

Date:

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

Notary Public;

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

## **CORPORATION IDENTIFICATION**

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

**If a Corporation:**

Incorporated in what state \_\_\_\_\_  
President \_\_\_\_\_  
Treasurer \_\_\_\_\_  
Secretary \_\_\_\_\_  
Federal ID Number \_\_\_\_\_

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

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

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

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

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

**If an Individual:**

Name \_\_\_\_\_  
Residence \_\_\_\_\_

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

Name of Firm \_\_\_\_\_  
Name of Individual \_\_\_\_\_  
Business Address \_\_\_\_\_  
Residence \_\_\_\_\_  
Date \_\_\_\_\_  
Name of Bidder \_\_\_\_\_  
By \_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_

Business Address \_\_\_\_\_ (POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City \_\_\_\_\_ State \_\_\_\_\_ Telephone Number \_\_\_\_\_ Today's Date \_\_\_\_\_

## **RIGHT TO KNOW LAW**

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

---

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

---

Signature

Date

---

Print Name

### **NOTE**

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

# MASSACHUSETTS WEEKLY CERTIFIED PAYROLL REPORT FORM



Company's Name:		Address:				Phone No.:				Payroll No.:									
Employer's Signature:		Title:				Contract No:		Tax Payer ID Number		Work Week Ending:									
Awarding Authority's Name:		Public Works Project Name:				Public Works Project Location:				Min. Wage Rate Sheet Number									
General / Prime Contractor's Name:		Subcontractor's Name:						"Employer" Hourly Fringe Benefit Contributions											
				(B+C+D+E) (A x F)															
Employee Name & Complete Address	Work Classification:	Employee is OSHA 10 certified (?)	Appr. Rate (%)	Hours Worked								Project Hours (A) All Other Hours	Hourly Base Wage (B)	Health & Welfare Insurance (C)	ERISA Pension Plan (D)	Supp. Unemp. (E)	Total Hourly Prev. Wage (F)	Project Gross Wages	Check No. (H)
				Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.									

Are all apprentice employees identified above currently registered with the MA DLS's Division of Apprentice Standards? YES ☐ NO ☐

For all apprentices performing work during the reporting period, attach a copy of the apprentice identification card issued by the Massachusetts Department of Labor Standards / Division of Apprentice Standards. No apprentices are identified above ☐

**NOTE:** Pursuant to MGL c. 149, s. 27B, every contractor and subcontractor is required to submit a true and accurate copy of their certified weekly payroll records to the awarding authority by first-class mail or e-mail. In addition, each weekly payroll must be accompanied by a statement of compliance signed by the employer. Failure to comply may result in the commencement of a criminal action or the issuance of a civil citation.

## WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form is available from the Department of Labor Standards (DLS) at [www.mass.gov/dols/pw](http://www.mass.gov/dols/pw) 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.

On a weekly basis, every contractor and subcontractor is required to submit a certified copy of their weekly payroll records to the awarding authority; this includes the payroll forms and the Statement of Compliance form. The certified payroll records must be submitted either by regular mail or by e-mail to the awarding authority. Once collected, the awarding authority is required to preserve those records for three years from the date of completion of the project.

Each such contractor and subcontractor shall furnish weekly **and** within 15 days after completion of its portion of the work, to the awarding authority directly by first-class mail or e-mail, a statement, executed by the contractor, subcontractor or by any authorized officer thereof who supervised the payment of wages, this form, accompanied by their payroll:

### STATEMENT OF COMPLIANCE

\_\_\_\_\_, 20\_\_\_\_

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 \_\_\_\_\_

## **DEBARMENT CERTIFICATION**

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity.

Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the City of Waltham, the contract will be cancelled and the award revoked.

---

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

Address \_\_\_\_\_

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

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

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

Signed by Authorized Company Representative: \_\_\_\_\_

\_\_\_\_\_ Print name. Date \_\_\_\_\_

## **10 HOURS OSHA TRAINING CONFIRMATION**

### **Chapter 306 of the Acts of 2004**

### **CONSTRUCTION PROJECTS**

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

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

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

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

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

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

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

Date \_\_\_\_\_

*See following Chapter 306 of the Acts of 2004*

#### **NOTE**

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

## Request for Taxpayer Identification Number and Certification

Give Form to the  
requester. Do not  
send to the IRS.

Fill Out This  
Section

Print or type  
See Specific Instructions on page 2.

Name (as shown on your income tax return)

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:

☐ Individual/sole proprietor ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶

☐ Other (see instructions) ▶

☐ Exempt payee

Address (number, street, and apt. or suite no.)

City, state, and ZIP code

List account number(s) here (optional)

Requester's name and address (optional)

Chief Procurement Officer  
Purchasing Department, City of Waltham  
610 Main Street  
Waltham, MA 02452

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number

\_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

Employer identification number

\_\_\_\_ - \_\_\_\_\_

Fill out this sect.  
either SS or FID

### Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below).

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign  
Here

Signature of  
U.S. person ▶

Date ▶

Sign & Date

### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

#### Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

**Note.** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

## TABLE OF CONTENTS

### SPECIFICATIONS

#### DIVISION 1

01010 Summary of Work  
01020 Allowances  
01025 Measurement and Payment  
01028 Change Order  
01030 Alternates  
01040 Control of the Work  
01050 Field Engineering  
01200 Project Meetings  
01300 Submittals  
01400 Quality Control  
01500 Temporary Facilities  
01700 Project Close-out

#### DIVISION 2

02100 Site Preparation  
02200 Earthwork  
02500 Granite Curb  
02510 Bituminous Concrete Paving  
02540 Safety Surfacing  
02725 Drainage Pipe  
02728 Drainage Structures  
02800 Site Furnishings  
02825 Chain Link Fencing  
02845 Guardrails  
02860 Playground Equipment  
02900 Seeding  
02901 Planting Soils  
02950 Planting  
03300 Cast-in-Place Concrete  
09614 Detectable Warning Panels  
10430 Exterior Signs and Plaques

#### Appendix A

Waltham Engineering Department Plan No.  
1276 Dated 7-30-1930

### LIST OF DRAWINGS

#### Cover Sheet

1 OF 1 Existing Conditions Plan  
1 OF 1 Plan No. 588 of 1986 Easement Plan  
L-1 Site Preparation Plan  
L-2 Materials Plan  
L-3 Layout Plan  
L-4 Grading & Drainage Plan  
L-5 Planting Plan  
L-6 Paving & Curbing Details  
L-7 Fencing Details  
L-8 Play Area Enlargement  
L-9 Play Equipment Details  
L-10 Play Equipment Details  
L-11 Play Equipment Details  
L-12 Play Equipment Details  
L-13 Site Improvement Details  
L-14 Site Furniture/Planting Details  
L-15 Signage Details  
L-16 Drainage Details  
L-17 Alternate No. 1

## SECTION 01010

### SUMMARY OF WORK

#### PART 1- GENERAL

##### 1.01 PROJECT DESCRIPTION

- A. The project consists of improvements to the existing Pond End Tot Lot, 93 Winter Street, Waltham, MA 02451, as described in the Contract Documents. As part of this contract, two benches are to be installed at Lazazzero Playground, 7 Shore Road, Waltham, MA.

##### 1.02 WORK TO BE DONE

- A. The work of this Contract includes, but is not limited to:
  - 1. Demolition of miscellaneous park elements as shown on the Demolition plan.
  - 2. Installing the following items to be supplied by the Owner:
    - a. Kompan play equipment as noted on the plans.
    - b. Landscape Structures swing set.
    - c. Dumor picnic table (1)
    - d. Dumor benches (4)
    - e. Dumor bike loops
    - f. Landscape Forms Plainwell Benches (2) to be installed at Lazazzero Playground.
  - 3. The Contractor shall furnish and install all other improvements noted on the Drawings, including but not limited to bituminous concrete paving, concrete paving, safety surfacing, granite curbing, concrete curbing, chain link fencing, guardrails, signage, drainage structures, infiltration chambers, birdhouses, trash compactors, planting and seeding.

##### 1.03 ITEMS TO BE SUPPLIED BY THE OWNER

- A. For those items to be supplied by the Owner, the Contractor shall provide any incidental hardware and all footings and other materials not supplied by the manufacturer, but required for installation of these items.
  - 1. Assembly of items provided by the Owner, including play equipment and site furniture, shall be the responsibility of the Contractor.
- B. The Contractor has certain responsibilities in connection with Owner furnished goods. Refer to Paragraph 1.13 of Section 01040 Control of the Work.

##### 1.03 CONTRACT TIME

### SUMMARY OF WORK

01010-1

- A. The time for Substantial Completion of the work is **105** 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 orders 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 Contract Limit Line shown on the Drawings defines the boundary of the site available to the Contractor for construction purposes.
  - 1. Absolutely no material shall be stored, or any vehicles enter, the existing Verizon utility easement.
- B. Vehicular access to the site will be limited to that equipment necessary to install the improvements.
- C. There shall be no on-site parking
- 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 those areas of the park site where construction is occurring and for the safety of all persons who enter within the Contract Limit Line.
  - 1. The playground shall be closed to the public throughout the duration of construction activity. 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 01500-Temporary Controls & Facilities, indicating the temporary closure of the park.
  - 3. Safety measures shall all include all those actions deemed necessary by the Contractor to ensure the safety of park users. These shall include but are not limited to:
    - (a) Temporary fencing at perimeter of the park as indicated on the Drawings.
    - (b) Filling in of all excavations at the end of the work day.
- 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 is responsible for provision of additional safeguards not specifically required by the Drawings if these are necessary to protect health and safety.
- E. 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 01020

### ALLOWANCES

#### PART 1- GENERAL

##### 1.01 ALLOWANCE FOR POLICE DETAIL

- A. The Contractor shall include as a line item in his/her bid, an allowance in the amount of \$1200 for the cost of police detail. This sum shall be included in the total bid price proposed by the Contractor.
- B. This allowance will cover the cost to the Contractor for police detail, if required to complete the work of this Contract.
  - 1. The cost for police detail will be reimbursed to the Contractor as described in Section 1040 - Control of Work, Section 1.05 Traffic Police.
- C. If the cost for Police Detail is more or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order.
- D. The allowance and reimbursement for police detail does not include any provisions for Contractor overhead and profit or other expenses related to police detail, other than the direct costs billed to the Contractor by the City of Waltham Police Department.

END OF SECTION

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1- GENERAL

##### 1.01 BASE BID & ALTERNATES

###### A. Measurement & Payment

1. Measurement for payment for construction of Improvements to Pond End Tot Lot 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 Mayor of Waltham, 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 ORDER PROCEDURE

### 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 Contract Sum, or a change in the Contract 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, to 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 transmit all four copies to the Owner for processing.

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 steel guardrail along Pond End School Lane with clearing of existing vegetation, as described on drawing Sheet L-17, and specified in the relevant Specification Sections.

END OF SECTION

## SECTION 01040

### CONTROL OF WORK

#### 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 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.

##### 1.03 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

### CONTROL OF THE WORK

Owner and Landscape Architect. The representative shall be in full charge of the Work and all instructions given to him shall be binding.

#### 1.04 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.

#### 1.05 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. The Contractor shall include in the lump sum bid price his/her line item an allowance for police detail as described in Section 01020 - Allowances.
- 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 - \$184.80 per officer; and one full day - \$369.60 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.

#### 1.06 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.

#### 1.07 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, tools or 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.

#### 1.08 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.

#### 1.09 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.
- A. 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.
- B. 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.
- C. Comply also with applicable provisions of American National Standard Code for Building Construction ANSI A10.6.

#### 1.10 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.

#### 1.11 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

#### CONTROL OF THE WORK

property.

#### 1.12 COORDINATION AND RECEIPT OF OWNER FURNISHED MATERIALS

- A. The Contractor shall coordinate with the Owner concerning the scheduling and delivery of Owner furnished items and shall provide the Owner with an address for delivery.
- B. The Contractor shall be responsible for receipt, unloading, inspection of and storage of all Owner furnished items from the time of delivery.
  - 1. The Contractor shall be responsible for unloading of all deliveries. The Contractor shall pay any extra delivery charges at the point of delivery such as off-loading by the supplier, lift-gate or inside deliveries should these services be requested by the Contractor.
  - 2. The Contractor is responsible for inspecting deliveries to ensure correct quantities and undamaged goods. The Contractor shall be responsible for addressing any deficiencies of the order with the supplier to obtain the correct goods.
  - 3. The Contractor shall be responsible for following suppliers stated policies for time to return or notify of damaged goods.
  - 4. The Owner assumes no responsibility for communicating with the supplier concerning damaged, missing, or incorrect goods.

#### 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, but is not limited to:
  - 1. Field staking the horizontal and vertical alignment of site improvements.
  - 2. Staking the southeastern property line of the park, between the park and abutting residential lots.
  - 3. Staking the southwestern property line along Pond End School Lane private way.
  - 4. Staking the Verizon/NET utility easement within the park site.

##### 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.

#### 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 the play area and play equipment.
- 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.

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, the City of Waltham Planning Department, 119 School Street, Waltham, MA (781) 314-3370 and the City of Waltham

### PROJECT MEETINGS

01200-1

Recreation Department, 510 Moody Street, Waltham, MA (781) 314-3475.

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 with long lead times for orders such as site furnishings need to be submitted immediately.** No extension of

### SUBMITTALS

01300-1

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. 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 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.
  - 2. 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 Contractor is responsible for the costs of tests specifically required in the technical specifications.
- B. The Owner may select, engage, and pay for the services of an independent testing laboratory to provide additional testing as the Landscape Architect/Engineer may deem appropriate.
- C. Test and 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 and Section 01020 - Allowances for allowance to be included in the bid price.

##### 1.06 BARRIERS AND ENCLOSURES

### TEMPORARY FACILITIES & CONTROLS

- 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.
- 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.
  - 1. Provide and install on the temporary fencing 2 signs indicating temporary closure of the park, as described in Section 1.08 below.
- 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 CLOSURE SIGN

- A. Signs indicating temporary closing of the park closing shall be 18" x 30" minimum and shall contain the words " The Park is Closed During Construction for Your Safety. Please Do Not Enter. Thank You for Your Cooperation.Waltham Parks and Recreation Department"
- B. Sign shall be of durable exterior grade painted plywood or metal securely mounted on posts or on fencing. Sign shall be professionally lettered and shall be produced by a professional sign shop or manufacturer

#### 1.09 PROJECT IDENTIFICATION SIGN

- A. The Contractor shall furnish and install one (1) 4'-0" x 6'-0" single sided project sign, as indicated, conforming to the City of Waltham requirements.

1. Such sign shall be fabricated from:
  - (a) 3/4" thick MDO exterior plywood, laminated with waterproof glue. All edges of sign shall be banded with 1" x 1/2" pressure-treated pine banding or
  - (b) 3/4" thick SignPly, single-sided, painted aluminum over furniture grade exterior plywood core, with factory-baked polyester paint on the finished side with a mill-finished aluminum backer to provide balance and prevent warping. Edge shall be sealed with Omega "H" channel edge cap and waterproof Omega sealant. Color shall be selected from Manufacturers standard colors as manufactured by Laminators, Inc., 3255 Penn Street, Hatfield, PA 19440, or approved equal or
  - (c) Laminated digital print on 3/4" PVC Board or 3MM Diabon .
- B. Sign shall be supported by 2 - 4" x 4" D. F. post supports set in 8" 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 below:

# POND END TOT LOT IMPROVMENTS

City of Waltham Recreation Department  
City of Waltham Planning Department

Landscape Architect  
Carolyn Cooney & Associates  
Milford, MA

Civil Engineer  
Site Engineering Consultants, Inc.  
Sharon MA

Contractor  
Name.  
City, State

Funded in Part By:  
THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND  
ENVIRONMENTAL AFFAIRS  
PARC GRANT FUND

END OF SECTION

## 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 (Electronic and Hard-copy)

- A. General: The Contractor is responsible for As-Built record drawings and for providing a final As-Built drawing in electronic format at the project close-out. 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. The Landscape Architect will provide the Contractor with an Autocad file of the site plan. The Contractor shall edit the file to provide the City of Waltham with an electronic as-built drawing file at the close-out of the project.
3. 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.
4. 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 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.

#### 1.07 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.

1.08 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.
    - (a) 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 (811) 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. Work within the Verizon/NET easement:
    - (a) Prior to any demolition work, the Contractor shall stake the limits of the Verizon/NET easement and shall contact Ellen Joy, Verizon Engineering Department, 781-935-3156, (ellen.m.joy@verizon.com) to arrange for a Verizon representative to oversee work within the easement.

##### 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. Demolition of items indicated on the Drawings.
  - 3. Removal of incidental site items not indicated on the site plan which will impede proposed construction.
  - 4. Protection of existing site elements 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.

##### 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.

#### 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 1.07.
- 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.

#### 1.11 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.

#### 1.12 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.**
- C. Prior to beginning work, contact the Verizon Engineering Department, as specified in

paragraph 1.01.B.1.a of this Section.

### 3.02 PROJECT CONDITIONS

- A. All apparatus, storage and the operation of work people in connection with activities under this Section shall be confined within the property lines of the park shall not encumber areas outside the site.
  - 1. No activities within the NET/Verizon Easement are permitted except those necessary to construct the improvements shown in the easement. No materials storage is permitted within the easement.
  - 2. Work within the NET/Verizon Easement shall be coordinated with the Verizon Engineering Department and shall be under the direction of an on-site Verizon representative.
- 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 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.

### 3.06 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 re-spreading after re-grading of planting beds is accomplished.

### 3.07 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.

### 3.08 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 (811) 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.
- C. Contact Verizon Engineering Department, Ellen Joy, 781-935-3156, for work within the Verizon/NET utility easement.

##### 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. Furnishing and installing base course for bituminous concrete paving and concrete paving.
  - 2. Furnishing and installing base course for play area.
  - 3. Miscellaneous fill for footings and slabs.
  - 4. Excavation for infiltration chambers.
  - 5. Site rough and fine grading.

##### 1.03 RELATED WORK

- A. Section 02100 - Site Preparation & Demolition
- B. Section 02510 - Bituminous Concrete Paving
- C. Section 02800 - Site Furnishings
- D. Section 02950 - Planting: See Planting for loam & plant mix.
- E. 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. Manufacturer's requirements for graduation of the crushed stone base course for safety surfacing, listing the sieve graduations required.
  4. Name of soils testing laboratory for compaction tests.
  5. Results of the Modified Proctor laboratory test for crushed stone base course subgrade fill under safety surfacing.
  6. Results of field compaction tests for safety surfacing base course and subgrade.

#### 1.07 COMPACTION 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:

- B. Maximum density and optimum water content determination by the ASTM D-1557-09 or AASHTO T-180 Modified Proctor laboratory test for "Suitable Backfill" for subgrade, at play area, and crushed stone base for safety surfacing at play area.
- C. On-site: Provide one field density test of the subgrade, and one field density test of in each compacted layer of stone basecourse layer, in 4 separate locations within playground area. 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.

#### 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

- 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. Dense grade leveling course under bituminous concrete paving shall conform to "Dense Grade Leveling Course" M2.01.7 of the Mass Standard Specifications for Highways and Bridges.

#### C. 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

- D. Crushed stone for safety surface base be a homogenous mixture of the following graduation, with exact graduation adjusted to the specific written requirements of the surfacing manufacturer. Stone shall be uniformly mixed in a pug mill or mixing table or other mechanical means prior to placement and sieve analysis

<u>Sieve Designation</u>	<u>Percent Passing</u>
1 inch	90-100
5/8 inch	50-80
1/4 inch	30-50
No. 4	15-35
No. 8	10-30
No. 30	3-5
No. 200	0-3

- E. Crushed Stone for all other uses 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.

### 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. 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 rock, stone, ledge, parts of stone, brick or cement concrete slabs greater in size than 1 cubic yard and which cannot be excavated without the use of hydraulic rippers, hammering or breaking, the size of which could not be determined from surface inspection, will be paid for at the Contract Unit Price per cubic yard for Rock Excavation due to unanticipated subsurface conditions, or adjustment may be made to the layout to avoid excavation of same.
- B. 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.
- C. When excavation has reached required subgrade elevations, notify the Landscape Architect.
- D. 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.
- E. 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.
- F. 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.
- G. 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.

- H. 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.

- I. 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. 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, 8 inches in loose depth for other materials compacted by heavy compaction equipment, not more than 6 inches in loose depth for material compacted by hand operated tampers, except that **compaction of base for safety surface shall be done in two (2) inch lifts.**

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. Refer to Paragraph 1.07 this Section, for Compaction Testing Requirements for subgrade and crushed stone base of playground area.
- B. 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.
- C. 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.

### 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 Contact 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 except that:
  - 1. Tolerance for grades of crushed stone base course shall be as required by the safety surface installer/manufacturer.
- G. Maintain the surface of any layer in its finished condition until succeeding layer is placed. Properly drain the sub-base 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, re-grading 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 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. This item of work shall consist of furnishing and installing granite curb as detailed on the Drawings.

##### 1.03 RELATED SECTIONS

- A. Section 02200 - Earthwork.
- B. Section 02510 - Bituminous Concrete Paving.
- C. Section 03300 - Cast-in-Place Concrete.
- D. Section 09614 - Detectable Warning Panels

##### 1.04 SUBMITTALS

- A. Submit the following in accordance with the requirements of section 01300 - Submittals:
  - 1. Suppliers literature demonstrating compliance with the Specifications.

##### 1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle granite curb to prevent damage.

##### 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. Massachusetts Standard Specifications for Highways and Bridges, latest edition.
  - 2. Americans with Disabilities Act Accessibility Guidelines (ADAAG)
  - 3. 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 Materials shall conform to the Massachusetts Standard Specifications for Highways and Bridges, latest edition, requirements specified in the following subsection of Division III, Materials:
- A. Granite curb shall be Type VA-4, conforming to Section M9.04.01.
    - 1. Curbs shall be fabricated such that ends fit together to provide no greater than ½" visible joints.
  - B. Existing on-site granite curb which has been removed may be re-used unless ends are broken, or curb is less than two feet in length.
  - C. Mortar M4.02.15
  - D. Gravel M1.03.0, Type C
- 2.02 Curb at curves shall conform to the requirements of M9.04.1 Curbs and Edging of the Mass Highway Standard Specifications.
- A. Curb set on radius of 100 feet or less shall be cut to the required curvature. The ends of all curved stones shall be cut on radial lines.
  - B. On curves with radii greater than 100 feet but less than 500 feet, curb stones may be 4 feet to not more than 6 feet in length.

## PART 3 - EXECUTION

- 3.01 Excavation of Trench
- A. The trench for the curb shall be excavated as detailed on the Drawings.
- 3.02 Preparing the foundation
- A. The foundation for the curb shall consist of gravel spread upon the subgrade and after being thoroughly compacted by tamping, depth as shown on the Drawings.
- 3.03 Setting Curb and Edging.
- A. Curbing, curb corners or edging shall be set on additional gravel spread upon the foundation.
  - B. All spaces under the curb, curb corners or edging shall be filled with gravel thoroughly compacted so that the curb, curb corners or edging will be completely supported throughout their length.
  - C. Concrete fill shall be placed at the front and back of the curb, continuous as detailed on the Drawings.

- D. The curb shall be set at the line and grade required as shown on the Plans unless otherwise directed.
- E. Neatly mortar joints.

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. Furnish and install bituminous concrete pavement

##### 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition
- B. Section 02200 - Earthwork: Aggregate Base Course
- C. Section 02800 - Site Furnishings

##### 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

### BITUMINOUS CONCRETE PAVING

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 bituminous concrete walkways 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 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
65F	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.

### 3.04 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 ( $\frac{1}{4}$ ) 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.

### 3.05 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.

### 3.06 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 02540

### SAFETY SURFACING

#### 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. Furnish and install safety surfacing of type and in locations shown on the Drawings and specified herein.

##### 1.03 RELATED WORK

- A. Section 02200 - Earthwork: Compacted crushed stone base
- B. Section 02860 - Play Equipment
- C. Section 03300 - Cast-in-Place Concrete: Concrete curb at perimeter

##### 1.04 WARRANTY

- A. The manufacturer shall provide to the Owner the manufacturer's standard warranty which shall be at a minimum for a 5 year period from the completion of the installation. The warranty shall guarantee the impact attenuation, color stability, and physical stability against cracking or separation of layers.

##### 1.05 DEFINITIONS

- A. Critical Height: Standard measure of shock attenuation. According to CPSC No. 325, this means "the fall height below which a life-threatening head injury would not be expected to occur".
- B. EPDM - Ethylene propylene diene monomer
- C. Fall Height: According to ASTM 1487, this means "the vertical distance between a designated play surface and the protective surfacing beneath it." The fall height of the playground equipment should not exceed the Critical Height of the protective surfacing beneath it.
- D. SBR - Styrene butadiene rubber
- E. TPV - Thermoplastic vulcanizate
- F. Use Zone: According to ASTM F1487, this means "the area beneath and immediately adjacent to a play structure that is designated for unrestricted circulation around the

### SAFETY SURFACING

02540-1

equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment.

## 1.06 SUBMITTALS

### A. Poured-in-Place Surfacing:

1. Submit manufacturer's certificate verifying that EPDM/TPV granules are manufactured from pre-consumer virgin rubber.
2. Submit manufacturers literature for top course (aliphatic primer) and base course primers demonstrating compliance with the specifications.
3. Submit manufacturer's literature demonstrating specification compliance for cushion course.
4. Submit manufacturer's literature documenting specification compliance with the following requirements:
  - (a) water permeability
  - (b) dry & wet coefficient of friction
  - (c) tensile strength
  - (d) tear resistance
  - (e) flammability
  - (f) UV stabilization method.
5. Submit depth of safety surfacing for different fall heights.
6. Provide a list of five (5) installations of rubber safety surfacing completed by proposed installer in the last five years using the same system, including project name, phone number, address, and contact.
7. Installer Certificates: Signed by manufacturer certifying that installers comply with requirements.
8. Manufacturer's Certificates: Signed by the manufacturer certifying that they comply with the requirements.
9. Product Test Reports: From IPEMA indicating that playground surface system complies with the requirements, based on comprehensive testing of the product as follows: ASTM F 1292 latest version, ASTM F 1951 latest version and CPS guidelines for impact attenuation for the fall height required by the equipment and the depth of safety surfacing. Product testing shall have been done within the last five (5) years.
10. Submit manufacturer's specifications for stone base course including required sieve gradation of stone, subgrade slope, and permissible tolerances in grade variation.

12. Maintenance Data: Submit manufacturer's printed installation and maintenance instructions.
13. Submit Performance Warranty, signed and dated for poured-in-place surfacing.

B. Samples:

1. Provide five (5) 4-inch diameter round samples of specific custom color blends requested by the Landscape Architect for final color selection by the Owner.

1.07 REFERENCES

- A. ASTM F 1292 - Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
- B. ASTM F 1951 - Standard Specification for Determination of Accessibility of Surface Systems Under and around Playground Equipment.
- C. U.S. Consumer Product Safety Commission (CPSC), Public Playground Handbook for Safety.
- D. ASTM D2434- Standard Test Method for Permeability of Granular Soils (Constant Head)
- E. Americans with Disabilities Act Guidelines (ADAAG) for Building and Facilities, 36 CFR Part 1191
- F. MAAB CMR 521 Regulations

1.08 FALL HEIGHTS

- A. Fall height is either 8' (96") or 8'-5" (101"). Refer to Sheet L-2 Materials Plan for location of different fall heights.

1.09 QUALITY ASSURANCE

- A. Surfacing manufacturer shall have marketed the surfacing system specified in the United States for at least five (5) years.
- B. Surfacing manufacturer shall have IPEMA Certification specific to poured in place safety surfacing of the system specified.
- C. Installer shall be trained and certified by the manufacturer as a qualified installer of their product. In addition, the installer shall have experience in installing at least three (3) installations of similar size and complexity.
- D. Rubber materials shall be supplied by an ISO9001 certified manufacturer.

## 1.10 REGULATORY REQUIREMENTS

- A. Installation of surfacing shall conform to applicable requirements of ADAAG - Americans with Disabilities Act Accessibility Guidelines, U.S. Architectural and Transportation Barriers Compliance Board, Washington, D.C. - latest edition, and regulations of the Commonwealth of Massachusetts Architectural Access Board (MAAB), 521 CMR.

## 1.11 JOB CONDITIONS

- A. At the time of application ambient air temperature shall be between 40 degrees and 90 degrees F and remain so for at least 72 hours after completion, unless otherwise specifically allowed by the manufacturer of the safety surface. There shall be no fluctuation in temperature greater than 15 degrees F during the installation period, or 25 degrees F during the curing time. Synthetic safety surfacing shall be installed on a dry subsurface, with no prospect of rain within the initial drying period.

## 1.12 COORDINATION

- A. Coordinate construction of playground surface systems with installation of playground equipment and perimeter curbing to verify accurate use zones and fall heights.
- B. The Contractor shall coordinate with the installer and manufacturer of the safety surfacing to ensure that all manufacturer's/installer's requirements for the base course are met including subgrade slope, drainage, maximum variation in grade of surface, and gradation of stone base.

## 1.13 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.
- B. All materials shall be protected from weather and other damage prior to application, during application and while curing. Materials shall be stored at a minimum temperature of 40 degrees and a maximum temperature of 90 degrees.
- C. Protect UV-light-sensitive materials from exposure to sunlight.

## PART 2 - MATERIALS

### 2.01 MANUFACTURERS

- A. Subject to compliance with the Specifications, manufacturers offering the products that may be incorporated into the work include, but are not limited to, the following:
  - 1. Surface America, Playbound PIP, local representative M.E. O'Brien & Sons, Medfield, MA (508-359-4200)

2. Duraturf PIP, local representative Sport Surface Specialties, East Aurora, NY (716-652-2039)
3. No-Fault Safety Surfacing, No Fault Sport Group, LLC, (225-215-7760).
4. Or Equal. To be considered equal, a manufacturer must meet all requirements of the Specifications including but not limited to the requirements for current IPEMA certification for the poured in place surfacing to be used and the use of virgin rubber for EPDM/TPV granules.

## 2.02 POURED-IN-PLACE PLAYGROUND SURFACING

- A. Playground surfacing shall be a system formulated for site-mixing and application from rubber particles in a polyurethane binder, forming a water permeable, UV-light stable, impact-attenuating, seamless playground surface system with layered construction consisting of a lower-density formulation of SBR particles and polyurethane forming a cushion-base layer bonded to higher-density formulation of EPDM or TPV rubber particles and aliphatic polyurethane, forming a top-layer wearing surface. Surfacing system shall be porous.
- B. Surface Characteristics
  1. Impact Attenuation: HIC of no more than 1000; peak deceleration of no more than 200 g's.
  2. Dry static coefficient of friction (ASTM D2047) - Min. 0.9
  3. Wet static coefficient of friction (ASTM D2047) - Min. 0.7
  4. Accessibility of Surface System: ASTM F1951: Pass
  5. Permeability: .04 gal/square yard/sec
  6. Tensile strength, measured by ASTM D412 shall be not less than 25 psi.
  7. Tear resistance (ASTM D624) - 140%.
  8. Flammability: shall pass ASTM D2859.
- C. Top Course:
  1. The top wearing course shall be a minimum ½" thickness monolithic layer composed of EPDM or TPV particles bound with polyurethane binder. The urethane content shall be 18% minimum by weight of the entire mixture.
    - (a) Polyurethane Binder for top course

- (1) Binder for top course shall be an **aliphatic** weather resistant, MDI-based UV-stabilized, flexible, non-hardening, 100 percent solids polyurethane complying with requirements of authorities having jurisdiction for nontoxic and low VOC content. No toluene diphenyl isocyanate (TDI) shall be used. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
  - (b) **TPV and EPDM particles shall be manufactured from pre-consumer virgin rubber.** Particles from post-consumer rubber are not acceptable.
    - (1) Approved sources for EPDM or TPV particles:
      - a. Rosehill Polymers, England as distributed by American Recycling Center, Owoosi, Michigan.
      - b. Melos-GMBH
      - c. Granules manufactured in the US from virgin pre-consumer rubber by an ISO9001 certified company.
    - (2) TPV and EPDM particles shall remain consistent in gradation and size as follows:
      - a. TPV particles shall be sized 1 mm - 4 mm.
      - b. EPDM particles shall be sized 1 mm - 3 mm.
      - c. Strand, shaved, chipped or shredded rubber is not acceptable in the wearing course layer.
    - (3) Color of particles shall be an integral dye. Color from coating or colored primer is not acceptable.
      - a. Pricing shall be based on a top course of 50% Brown, 50% Light Grey with final selection by the Owner from colors of comparable price.
- D. Base Cushion Layer: The base impact layer shall be a monolithic layer composed of shredded 100% styrene butadiene rubber (SBR), or manufacturer's standard formulation of pre-consumer recycled 5/8" chunk rubber, bound together with a polyurethane binder.

1. The dust content shall be no greater than 4%.
2. Binder shall be a single component polyurethane designed for use with rubber granule material for outdoor installations.
3. Urethane in the base layer shall be a minimum of 14% by weight of the entire mix.

## 2.02 BASE COURSE FOR POURED-IN-PLACE SURFACING

- A. Base course shall be crushed stone as specified in Section 02200 - Earthwork, with gradation adjusted to manufacturer's recommendations. Bid shall include any additional costs necessary to adjust specified crushed stone base to the gradation and requirements of the specific manufacturer of the surfacing.

## PART 3 - INSTALLATION

### 3.01 BASE PREPARATION

- A. Subgrade under base course shall be installed and compacted as specified in Section 02200-Earthwork. Subgrade shall be tested as specified in Section 02200 - Earthwork.
  1. Slope subgrade of base course 2%.
- B. Aggregate base course shall be installed and compacted in Section 02200 - Earthwork, fully compacted in 2" lifts to 95% compaction. Contractor shall perform compaction testing specified in Section 02200 - Earthwork on first lift and last lift.
- C. Variation in grade of aggregate surface shall be as required by the manufacturer/installer.

### 3.02 INSPECTION OF BASE

- A. Verify that base is installed to correct slopes, grades and tolerances prior to installation of poured in place surfacing. Prior to application of the poured in place system, the applicator shall evaluate the substrate's structural performance, and notify all contractors and the landscape architect of any deficiencies. Work shall not proceed until unsatisfactory conditions are corrected.
- B. Prior to installation, verify that cast-in-place perimeter curbing has been set to correct lines and grades to ensure adequate safety zones and grades not

exceeding 2%.

1. Curb shall be flush with safety surfacing with no deviation greater than 1/8".

- C. Refer to Paragraph 1.11 Job Conditions for environmental requirements. Temperature of all components shall be checked to ensure that their temperature is equal to or greater than 40 degrees F. Components that are below the required application temperature shall not be used until the temperature is elevated to the specified application temperature.

1. Install safety surfacing to the dimensions and limits shown on the Drawings.

2. Surfacing shall be installed in strict accordance with the submitted manufacturer's printed installation instructions and as detailed on the Drawings.

### 3.03 PROTECTION

- A. Provide protection of surface during curing process.

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 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.

#### 1.05 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.
- D. Product Data: The Contractor shall provide data indicating pipe and pipe accessories, connections, etc.

#### 1.06 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 of filter fabric.

#### 1.07 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.

#### 1.08 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.

#### 1.09 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 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 a drainage system consisting of Slot Drain, Manhole, 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.

##### 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition.
- B. Section 02200 - Earthwork.
- C. Section 02725 - Drainage Pipe.
- D. Section 03300 - Cast-in-Place Concrete.

##### 1.04 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.

### DRAINAGE STRUCTURES

- 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).

#### 1.05 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.

#### 1.06 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.
- D. One (1) square foot filter fabric.

### PART 2 - MATERIALS

#### 2.01 CEMENT CONCRETE

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

#### 2.02 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.

## 2.03 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, HD20 loading, solid cover, with a pick-hole, with water tight top flange complying with the requirements of the City of Waltham Engineering Department.

## 2.04 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.

## 2.05 FILTER FABRIC

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

## 2.06 SLOT DRAIN

- A. Slot drain shall be as manufactured by SportEdge or approved equal.
  - 1. Drain Channel shall be fabricated of polymer concrete and schedule 40 PVC pipe, 8 inch ID with radius non-sloping bottom conforming to the following:
    - a. ½" maximum polymer concrete drainage slot with interlocking ends, with polymer concrete reinforcing at 6"± intervals.

- b. Joint coupler: 8" PVC slip coupler, 3.75 inch minimum width.
  - c. Channel length: 2 meter Slot drain cover shall be polymer concrete, ½" maximum slot, removable.
- 2. Slot opening shall be ½" maximum
  - 3. Accessories: Slot drain PVC 8" end cup when required for straight runs.

### 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 (½) 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 Slot Drain
  - A. Install per manufacturer's instructions and as indicated on the plans.
- 3.13 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. The Owner will furnish certain of the site furnishing for installation by the Contractor. See Section 01040 - Control of the Work, Section 1.13 for a description of the Contractor's responsibilities in checking, receiving, storing and coordinating with the manufacturer to receive a complete and satisfactory order of these items. For those items supplied by the Owner, the Contractor shall provide any incidental hardware and all footings and other materials not supplied by the manufacturer, but required for installation of these items. The Contractor shall be responsible for assembly of all items provided by the Owner.
- B. Owner supplied items for work within this Section:
  - 1. 4 Benches to be installed at Pond End Tot Lot
  - 2. 2 Benches to be installed at Lazazzero Playground
  - 3. 1 Picnic Table
  - 4. 2 Bicycle Loops
- C. Contractor furnished and installed items for work within this Section
  - 1. Two Big Belly "Kiosks". One Kiosk to be on-site. The second kiosk to be delivered to Consolidated Public Works, Waltham, MA.
  - 2. Bird Nesting Houses and Support Post
- D. Any items not specifically indicated to be supplied by the Owner, shall be assumed to be supplied by the Contractor.

##### 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. Concrete mix for footings.

- B. Manufacturer's installation instructions for all items.
- C. Manufacturer's literature for Big Belly Compactor and Bird Nesting Houses.

#### 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. Americans with Disabilities Act Accessibility Guidelines (ADAAG)
  - 2. 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 BENCHES

- A. Benches furnished by the Owner for installation at Pond End Tot Lot will be 3 Dumor Model 165 Recycled Plastic Bench with Backrest as illustrated in the Drawings and 1 Dumor Model 166 PL Recycled Plastic Bench without Backrest.
- B. Benches furnished by the Owner for installation at Lazazzero Playground will be 2 Plainwell Benches, manufactured by Landscape Forms.

#### 2.02 PICNIC TABLE

- A. Picnic table furnished by the Owner will be Dumor Model 100PL Accessible Recycled Plastic table as illustrated in the Drawings.

#### 2.03 BICYCLE LOOPS

- A. Bicycle loops supplied by the Owner will be Dumor powder-coated heavy duty steel loops, as illustrated in the Drawings.

#### 2.04 BIG BELLY KIOSK (2 Total)

- A. The Contractor shall provide 2 Big Belly Solar "Kiosks" as manufactured by BigBelly Solar, Inc., 85 Wells Avenue, Suite 305 Newton, MA 1-888-820-0300, or equal, Model #BigBKiosk1" consisting of a Big Belly Trash Compactor, and aSmartBelly Recycling Collector.

1. Each unit shall be approximately 50.4" in height, 25" in width, and 27" in depth.
    - a. Compactor shall have a 33 gallon bin volume.
    - b. Recycling Collector shall have a 50 gallon bin volume.
  2. Units shall have a fully automated IC processor controlled system which senses trash level, fullness, and machine status, with LED status indicator. System voltage shall be a low voltage system, 12 Volts DC, with a spill-proof maintenance free 12 V battery. Units shall be cordless, self-powered requiring no wiring.
  3. Materials shall be RoHS compliant, galvanized sheet metal steel interior and exterior construction, with a TGIC powder-coat exterior finish. Interior bins shall be leak proof.
  4. Units shall have locked front trash removal door, and fully interlocked access doors, with separately keyed service access.
  5. Units shall be designed to prevent access to compaction area.
  6. The Big Belly trash compactor
    - a. Compaction force shall be 1250 lbs max.
    - b. Gear motor shall be heavy duty chain drive (non-hydraulic).
    - c. Users shall be able to deposit trash even during cycle time.
- B. The Contractor shall install one kiosk unit, as shown on the Drawings. The second kiosk unit shall be delivered to Consolidated Public Works, Waltham, MA.

## 2.05 BIRD NESTING HOUSES

- A. The Contractor shall furnish and install two bird nesting houses. Houses shall be as follows:
1. Houses shall be Eco-Friendly Bluebird House (1) and Eco-Songbird Roosting Box, as supplied by Duncraft (1-888-87-5095), or approved equal.
  2. Houses shall be constructed of PVC and recycled plastic, with a wood grain finish, fastened with screws. Houses shall have predrilled holes for mounting.
  3. Eco-Songbird Roosting Box shall contain roosting ladder and shall be approximately 5 x 5 x 9".
  4. Eco-Bluebird Box shall be approximately 7" x 8" x 12".
- B. Provide two supports and detailed on the Drawings.

## PART 3 - EXECUTION

### 3.01 GENERAL REQUIREMENTS

- A. Site improvements shall be installed 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 coordinate delivery time with the manufacturer for timing the delivery of items so as to minimize on-site storage time prior to installation. 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.
  - 1. The Contractor is responsible for storage of all site improvements, including those furnished by the Owner.
- 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.
- E. Field touch-up all abraded or scratched surfaces with manufacturer's recommended paint and/or cold galvanizing materials.

### 3.02 CONCRETE FOOTINGS

- A. Cast-in-place concrete footings for site improvements shall 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 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 furnishing and installing vinyl-clad chain link fence and gates in the heights and locations shown on the drawings.

##### 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

### CHAIN LINK FENCING

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 meet the following requirements as a minimum:
  - 1. Wire shall be galvanized 9 gauge (.148") core measured **prior to PVC coating**, 6 gauge after 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 be knuckled.
- B. Framework (Posts, Rails, and Gate Frame)
  - 1. Steel parts shall be hot-dipped galvanized inside and out prior to vinyl coating.
    - a) Round 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) Square gate posts and frames shall meet ASTM A500 Grade B with a minimum yield strength of 40,000 psi, sized as indicated.
  - 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) rounded 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 4,000 psi minimum.

## 2.02 Chain Link Swing Gates

- 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. 4' wide pedestrian gates:
    - a) Hinges shall be self-closing, and shall be "Truclose" by D&D Technologies (1-800-716-0888) for square frames, or equal.
    - b) Latches shall be self-latching and allow opening from either side of the gate, equal to D&D Technologies LockkLatch Deluxe (1-800-716-0888).
  - 2. 12' wide maintenance gates:
    - a) Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Hinge shall permit gate to swing 180° inward.
    - b) Latches: Provide drop bolt and latch as detailed on the drawings, and padlock keyed into the City's system.

## 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. 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.
- B. Fabric - Leave 3" between finish grade and bottom selvage. Pull fabric taut and tie to posts and rails.

- C. Stretcher Bars - Thread through fabric and secure to posts with tension bands spaced as shown on the Drawings.
- D. 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.
- E. Fasteners - Install nuts for tension band and hardware bolts on side of fence opposite fabric side.

### 3.03 GATE INSTALLATION

- A. Install gates plumb, level, and secure for full opening without interference.
- B. Attach hardware by means which will prevent unauthorized removal.
- C. Adjust hardware for smooth operation.
- D. Touch up hardware with PVC touch up paint provided by manufacturer to match adjacent finish.

### 3.04 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 02845

### GUARDRAILS (Base Bid and Alternate #1)

#### 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:
  - 1. Base Bid: Furnish and install wood guardrail in locations shown on the Drawings.
  - 2. Alternate No. 1: Furnish and install steel guardrail in locations shown on the Drawings.

##### 1.03 RELATED WORK

- A. Section 02100 - Site Preparation and Demolition
- B. Section 02200 - Earthwork

##### 1.04 SUBMITTALS

- A. Submit manufacturer's product literature demonstrating compliance with the Specifications for all items.

##### 1.05 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. 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.

- C. 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.

## PART 2 - PRODUCTS

### 2.01 Wood Guardrail

- A. Wood guardrail shall be as dimensioned as shown on the Drawings.
  - 1. Guardrail shall be constructed of solid pressure treated Southern Yellow Pine, planed to a smooth splinterless surface.
- B. Guardrail posts shall be dimensioned, chamfered and notched to accept rails, as shown on the Drawings.
- C. All hardware shall be galvanized steel.

### 2.02 Steel Guardrail

- A. Steel guardrail materials shall conform to Section 601 Highway Guard of the Massachusetts Highway Department Standard Specifications for Highways and Bridges.

## 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.
- B. Align posts and rails in consistent alignment, plumb and true.
- C. Installation of steel guardrail shall conform to Section 601 Highway Guard of the Massachusetts Highway Department Standard Specifications for Highways and Bridges.

END OF SECTION

## SECTION 02860

### PLAYGROUND EQUIPMENT

#### 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. The Owner will furnish all play equipment for installation by the Contractor. See Section 01040 - Control of the Work, Section 1.13 for a description of the Contractor's responsibilities in checking, receiving, storing and coordinating with the manufacturer to receive a complete and satisfactory order.
  - 1. For those items to be supplied by the Owner, the Contractor shall provide any incidental hardware and all footings and other materials not supplied by the manufacturer, but required for installation of these items.
  - 2. The Contractor shall be responsible for assembly of all items provided by the Owner.
- B. The work shall include, but is not limited to installing of the following equipment:
  - 1. Kompan "Little Duckling" spring animal.
  - 2. Kompan "Little Elephant" play animal.
  - 3. Kompan "Coupe" play car.
  - 4. Kompan "Gym2" play cluster
  - 5. Kompan "Aldebaran" play cluster
  - 6. Landscape Structures, two bay arch swing set with 2 strap seats, one full bucket seat, and one molded swing seat.
- C. Footing and installation details are included on the Drawings for purposes of bidding. It shall be the Contractor's responsibility to obtain complete installation instructions from the manufacturer. Where the Drawings and Manufacturer's instructions differ, notify the Landscape Architect prior to proceeding.

##### 1.03 RELATED SECTIONS

- A. Section 02200 - Earthwork.
- B. Section 03300 - Cast-in-Place Concrete.
- C. Section 02540 - Playground Surfacing

### PLAYGROUND EQUIPMENT

02860-1

#### 1.04 SUBMITTALS

1. Submit concrete mix, as required under Section 03300 - Cast-in-Place Concrete.
2. Submit manufacturer's installation instructions for each piece of play equipment.

#### 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. Materials, layout and installation of play equipment shall comply with the following guidelines and standards:
  1. ASTM F 1487 - American Society for Testing Materials Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, latest edition.
  2. ASTM F2373-08 - Standard Consumer Safety Performance Specification for Public Use Play Equipment for Children 6 months through 23 months
  3. National Bureau of Standards, U.S. Consumer Product Safety Commission (CPSC), Public Playground Safety Handbook, 2008
  4. IPEMA - International Play Equipment Manufacturers Association

#### 1.07 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing work similar in material, design, and extent to that indicated for this project and who is acceptable to manufacturer of playground equipment.

#### 1.08 COORDINATION

- A. Coordinate construction of equipment use zones and fall heights during installation of playground equipment with installation of protective surfacing specified in Section 2540 Playground Surfacing. Sequence work so protective surfacing can be installed as soon as possible after concrete footings have set.

### PART 2 - PRODUCTS

#### 2.01 CONCRETE FOOTINGS

- A. Cast-in-place concrete footings for site improvements shall 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 and crushed stone shall conform to the requirements of Section 02200 - Earthwork.

## 2.02 PLAY EQUIPMENT

- A. Play equipment to be installed is illustrated by manufacturer's cut sheet in Paragraph 3.07 of this Section.

## PART 3 - INSTALLATION

### 3.01 General

- A. Do not begin installation before final grading required for placing protective surfacing is completed.
- B. Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated on Shop Drawings.
  - 1. Maximum Equipment Height: Coordinate installed heights of equipment and components with installation of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

### 3.02 Verification of Use Zones

- A. Contractor shall layout all playground equipment as per the Drawings.
- B. The Contractor shall be aware of all clear Use Zones around the play equipment, as indicated on the drawings, and shall ensure that all minimum Use Zones are complied with. Verify locations of playground perimeter.
- C. Use Zones are the areas around all play equipment that shall be clear of any obstacles, including, but not limited to, curbs, trees, and fencing. Contractor shall bring to the attention of the Landscape Architect any discrepancies between plans and actual site conditions, where there is a conflict with the required use zone.
  - 1. The Contractor shall notify the Landscape Architect for review of the layout prior to installation of play equipment and pouring of footings.

### 3.03 FOOTINGS

- A. Provide concrete footings dimensioned and spaced as shown on the Drawings, and as required by the play equipment manufacturer. Top of footing shall be flush with and shall not protrude above aggregate base course in order to provide adequate depth of safety surfacing.
- B. Post and Footing Excavation: Hand-excavate holes for posts and footings to dimensions, profile, spacings, and in locations indicated on Drawings, in firm, undisturbed or compacted subgrade soil. Level bearing surfaces with drainage fill to required elevation.
- C. Post Setting: Set main-frame equipment posts in concrete footing. Protect portion of posts above footing from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Verify that posts are set plumb or at the correct angle and are aligned and at the correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
  - 1. Concrete Footings: Smooth top, and shape to shed water.
- D. Assemble play components according to manufacturer's instructions.
- E. Pour concrete footings and let set a minimum of 24 hours before proceeding.
- F. Place assembly in footings, block up, plumb and level.

#### 3.04 FIELD QUALITY CONTROL

- A. Arrange for playground equipment manufacturer's technical personnel to inspect playground and playground equipment and components during installation and at final completion and to certify compliance with the following:
  - 1. ASTM F 1487.
  - 2. CPSC No. 325.
- B. Notify the Landscape Architect 48 hours in advance of date and time of final inspection.

#### 3.05 ADJUSTING

- A. Adjust movable playground equipment components to operate smoothly, easily, and quietly, free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range.

#### 3.06 CLEANING

- A. After completing playground equipment installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component

#### 3.07 PLAY EQUIPMENT FURNISHED BY THE OWNER TO BE INSTALLED BY THE CONTRACTOR

## KOMPAN Product Info

### Little Duckling • M188P

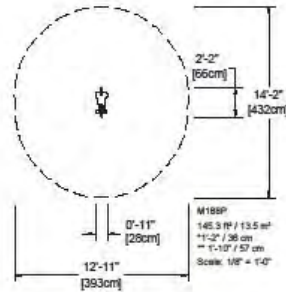
Best User Age: 6 mo – 2 yrs

Footing Information: In-ground posts.  
Surface installation also available.

Technical information available at [komaninfo.com](http://komaninfo.com)

ADA ANALYSIS	Elevated Activities: N/A	Accessible Elevated Activities	Accessible Ground Level Activities	Accessible Ground Level Play Types
Present	N/A	N/A	N/A	N/A
Required	N/A	N/A	N/A	N/A

MOMENTS



\* = Highest designated play surface.

\*\* = Total height of product.

Highest designated play surface and space required are according to ASTM 2373.

Equipment must be installed over resilient surfacing appropriate to the safety guidelines in your area.

Product development is an ongoing process. We reserve the right to make modifications on all our products. This product may not be mimed, scaled or altered in any way. Safety zones must be retained for proper placement of equipment. If any changes are required, please contact your KOMPAN representative at 1.800.426.9788.

## KOMPAN Product Info

## Little Elephant • M189P



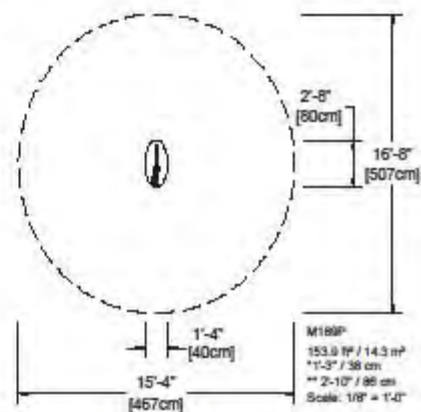
Best User Age: 6 mo – 4 yrs

Footing Information: In-ground posts.  
Surface installation also available.

Technical information available at [kompaninfo.com](http://kompaninfo.com)

ADA ANALYSIS	Elevated Activities: 0	Accessible Elevated Activities	Accessible Ground Level Activities	Accessible Ground Level Play Types
Present	0	1	1	
Required	0	1	1	

MOMENTS



To verify product certification, visit [ipemaz.org](http://ipemaz.org)

\* = Highest designated play surface.

\*\* = Total height of product.

Highest designated play surface and space required are according to ASTM 1487.

Equipment must be installed over resilient surfacing appropriate to the safety guidelines in your area.

Product development is an ongoing process. We reserve the right to make modifications on all our products. This product may not be mirrored, scaled or altered in any way. Safety zones must be retained for proper placement of equipment. If any changes are required, please contact your KOMPAN representative at 1.800.426.9788.

## KOMPAN Product Info

### Coupe Deluxe • MSC5414P



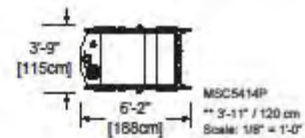
Best User Age: 6 mo – 4 yrs

Footing Information: In-ground posts.  
Surface installation also available.

Technical information available at [kompaninfo.com](http://kompaninfo.com)

ADA ANALYSIS	Elevated Activities: 0	Accessible Elevated Activities	Accessible Ground Level Activities	Accessible Ground Level Play Types
Present	0	1	1	
Required	0	0	1	1

MOBILITY



To verify product certification, visit [ipema.org](http://ipema.org)

\* = Highest designated play surface.

\*\* = Total height of product.

Highest designated play surface and space required are according to ASTM 1487.

Equipment must be installed over resilient surfacing appropriate to the safety guidelines in your area.

Product development is an ongoing process. We reserve the right to make modifications on all our products. This product may not be mirrored, scaled or altered in any way. Safety zones must be retained for proper placement of equipment. If any changes are required, please contact your KOMPAN representative at 1.800.426.9788.

## KOMPAN Product Info

Gym 2 • ELE400231



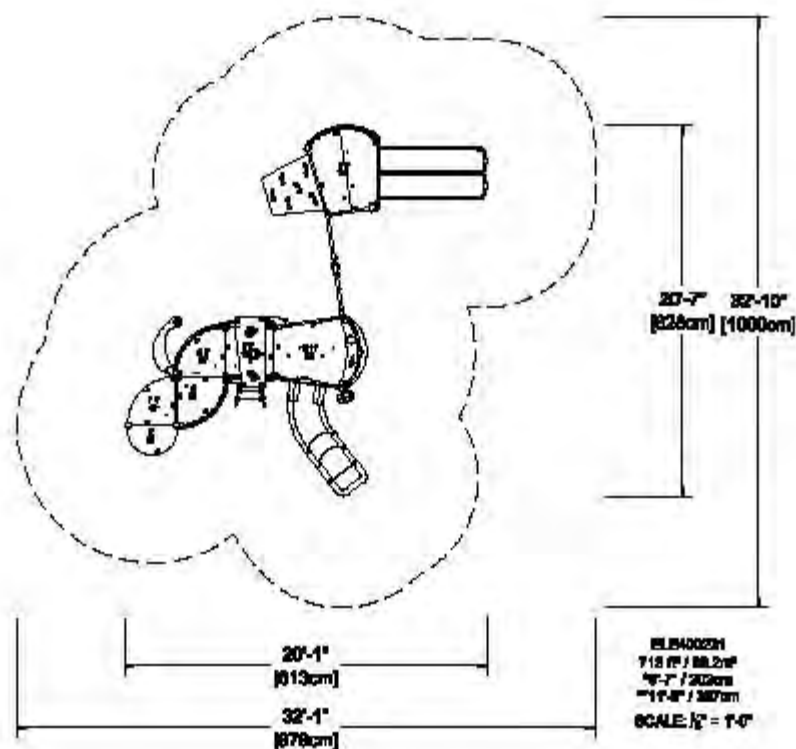
Best User Age: 2-5 years

Footing Information: In-ground posts.  
Surface installation also available.

Technical information available at [komaninfo.com](http://komaninfo.com)

ADA ANALYSIS	Elevated Activities: 0	Accessible Elevated Activities	Accessible Ground Level Activities	Accessible Ground Level Play Types
Present	5	5	3	
Required	0	0	0	0

ELE400231



To verify product certification, visit [komaninfo.com](http://komaninfo.com)

\* = Highest designated play surface.

\*\* = Total height of product.

Highest designated play surface and space required are according to ASTM 1487.

Equipment must be installed over resilient surfacing appropriate to the safety guidelines in your area.

Product development is an ongoing process. We reserve the right to make modifications on all our products. This product may not be mirrored, scaled or altered in any way. Safety zones must be retained for proper placement of equipment. If any changes are required, please contact your KOMPAN representative at 1.800.426.9782.



Red



Green



Blue



## KOMPAN Product Info

Aldebaron • GXY941



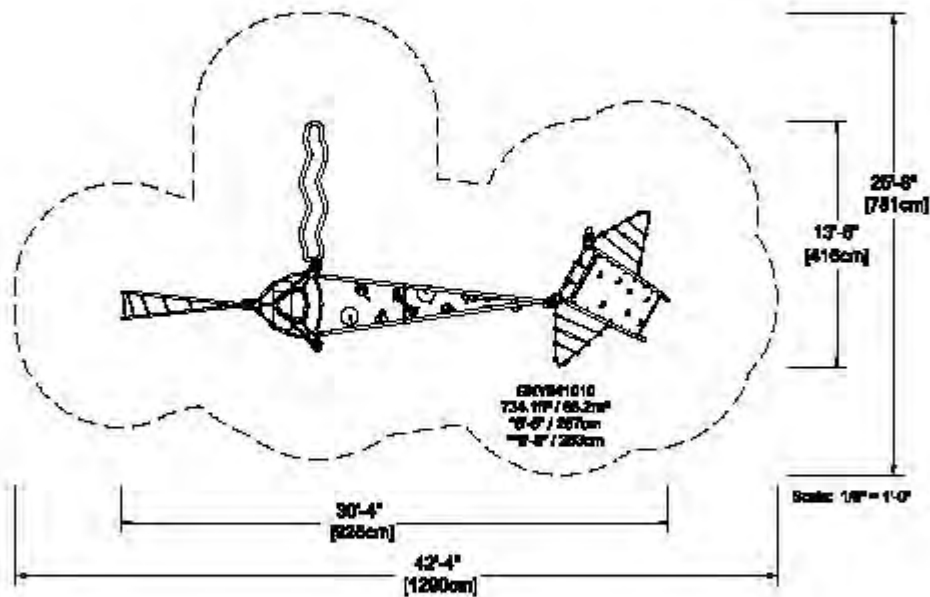
Best User Age: 5–12 years

Footing Information: In-ground posts.  
Surface installation also available.

Technical information available at [kompan.com](http://kompan.com)

ADA ANALYSIS	Elevated Activities: 0	Accessible Elevated Activities	Accessible Ground Level Activities	Accessible Ground Level Play Types
Present	0	5	3	
Required	0	3	3	

GALAXY



To verify product certification, visit [kompan.com](http://kompan.com)



\* = Highest designated play surface.

\*\* = Total height of product.

Highest designated play surface and space required are according to ASTM 1487.

Equipment must be installed over resilient surfacing appropriate to the safety guidelines in your area.

Product development is an ongoing process. We reserve the right to make modifications on all our products. This product may not be mirrored, scaled or altered in any way. Safety zones must be retained for proper placement of equipment. If any changes are required, please contact your KOMPAN representative at 1.800.426.0708.



Green



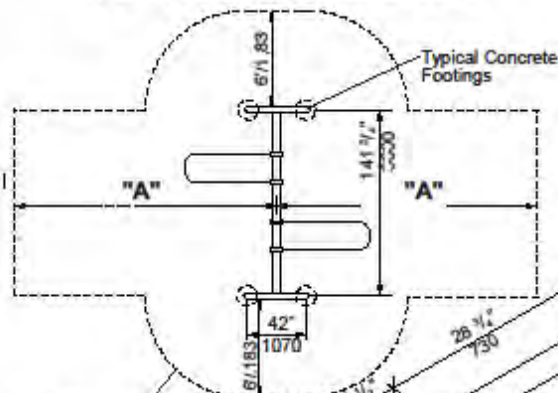
Blue



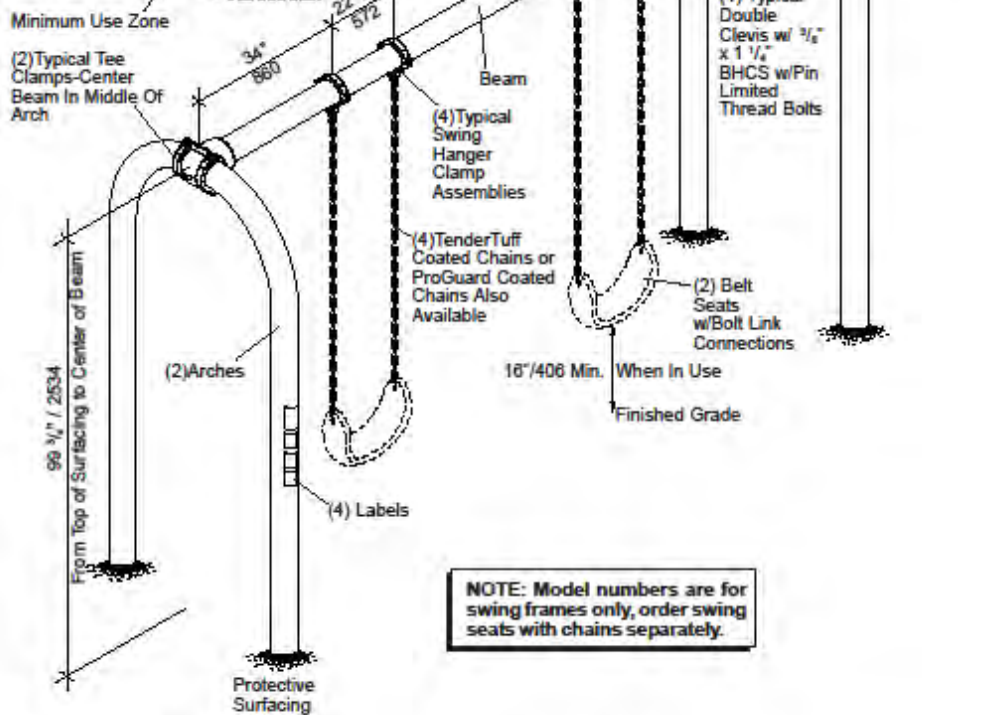
**SAFETY NOTE**  
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Full Height of the adjacent equipment. (Ref. ASTM F1487.)

16448000

## PLAN VIEW/FOOTING LAYOUT



KEY	Dimension "A"
Seat Type	
Belt	16'-0" (4.88 m)
Flat	16'-0" (4.88 m)
Full Bucket	12'-0" (3.66 m)
Half Bucket	16'-0" (4.88 m)
Molded Bucket	16'-0" (4.88 m)
Molded Bucket/Harness	13'-0" (3.96 m)
Infant Full Bucket	N/A



**NOTE:** Model numbers are for swing frames only, order swing seats with chains separately.

Model #177331 Additional Bay

**Swings**

**177330/177331 Arch Belt Swing Frame**

Sheet 1 of 2

801 7TH STREET SOUTH, DELAND, MINNESOTA 55328-8806 (763) 972-3361 1-888-L3I-N3T (1-888-574-4678) FAX (763) 972-3186

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Document #16448000

(2 Bays to be Installed)

END OF SECTION

PLAYGROUND EQUIPMENT

02860-12

## SECTION 02900

### SEEDING

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, preparation of ground surfaces, fertilizing, liming, seeding, mulching, and maintenance of seeded areas as shown on the Drawings or as specified herein.

##### 1.02 SPECIAL CONDITIONS

- A. Seeding shall be preformed using a mechanical slit or drill (eg. Brillion) type seeder which places the seed beneath the soil. Seeding on slopes 4:1 or greater may be by hand or mechanical spreader.
- B. After seeding install jute mesh in areas indicated on the Planting plan.

##### 1.03 RELATED SECTIONS

- A. Section 02901 - Planting Soils

##### 1.04 SUBMITTALS

- A. Submit vendor's certified analysis for each grass seed mixture required, stating botanical and common name, percentages by weight, percentages by purity, germination, and weed seed.
- B. Submit manufacturer's or vendor's certified analysis for soil amendments, fertilizers and jute mesh demonstrating compliance with the Specifications.

##### 1.05 COORDINATION AND SCHEDULING

- A. It is the intention of this specification that lawn be seeded between the dates of August 20<sup>th</sup> and September 20<sup>th</sup>. Coordinate all aspects of the project to achieve this date.
- B. Seeding is to be performed only after installation and full operation of the irrigation system.
- C. Weather Limitations: No fertilizer shall be applied during the rain, or when rain is predicted, or upon frozen ground. No fertilizer shall be applied between the dates of November 1<sup>st</sup> and April 1<sup>st</sup>.

#### 1.06 QUALITY ASSURANCE

- A. All landscaping work shall be performed by one (1) Contractor, with proven experience in this field.
- B. Package standard products with the manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
- C. The Contractor shall provide any pay for all costs in connection with an approved independent testing facility to determine conformance of the installation of the materials with the specifications.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis, and name of manufacturer. Store in a manner to prevent wetting and deterioration.
- B. Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.

#### 1.08 PROJECT CONDITIONS

- A. Work notification: Notify Landscape Architect at least 7 working days prior to start of seeding operations..
- B. Perform seeding work only after other work affecting ground surface has been completed.
- C. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- D. The irrigation system will be installed prior to seeding. Locate, protect, and maintain the irrigation system during seeding operations.
- E. Do not fertilize in the rain, or when rain is forecast.

#### 1.09 WARRANTY

- A. Provide a uniform stand of grass by watering, mowing, and maintaining seeded areas until final acceptance. Reseed areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the Landscape Architect.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

#### A. Soil Amendments:

1. Lime: Natural limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.
2. Fertilizer:
  - a) Starter Fertilizer shall be a commercial fertilizer (5-10-5) containing not less than five (5) percent nitrogen, ten (10) percent available phosphoric acid, and five (5) percent water soluble potash. At least 25% of the nitrogen shall be slow-release nitrogen.
  - b) Maintenance Fertilizer shall be at a custom mixed fertilizer based on soil testing recommendations. Nitrogen in fertilizer shall be a minimum of 60% controlled release polymer coated nitrogen, Polyon or equal.
2. Seed shall be fresh, clean, new-crop seed mixed in the proportions specified for species and variety, conforming to Federal and State Standards.
3. Seed Mix shall be Triple A Tall Fescue Blend consisting of 3 Tall Fescue named varieties equivalent in performance to 45% Inferno, 28% Arid and 27% Quest supplied by Jacklin Seed, or Cayenne, Mustang, and Crossfire varieties as supplied by Pick Seed.
3. Weed seed content shall not exceed 0.01%.

#### C. Water: Clean, potable.

#### D. Jute Mesh:

1. Jute mesh shall be ECTC Type 3B, with 14-20 strands per foot in each direction. Jute shall be unbleached and undyed woven jute. Maximum shear stress shall be 2.0 psf per ASTM D6460, minimum tensile strength 100 psf per ASTM D5035, and weight of fabric from 14.4 to 19.2 oz per square yard. The average open area shall be 65% plus or minus 5%.

### 2.02 MECHANICAL EQUIPMENT REQUIRED

- A. Except on slopes 4:1 or greater, seeding shall be preformed using a mechanical slit or drill (eg. Brillion) type seeder which places the seed beneath the soil. Slit seeders shall have a 1.5" spacing maximum. Hand broadcast or mechanical spreader is acceptable on slopes 4:1 or greater.

- B. Only rubber-tired low compaction turf-tired or track equipment may be used in seeding operations.
- C. Hydroseeding of new or restored lawn areas is not acceptable, except on slopes 4:1 or greater.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Examine finish surfaces, grades, topsoil quality, and depth. Do not start seeding work until unsatisfactory conditions are corrected.

### 3.02 PREPARATION

- A. Limit preparation to areas which will be immediately seeded.
- B. Loosen topsoil to a minimum depth of 4". Remove stones over 1" in any dimension and sticks, roots, rubbish, and extraneous matter.
- C. Clean topsoil of roots, plants, stones, clay lumps and other extraneous materials harmful or toxic to plant growth.
- D. Grade field area to a smooth, free draining even surface with a loose, moderately coarse texture. Roll and rake, remove ridges, and fill depressions as required to drain.

### 3.03 LIMING

- A. Apply limestone in two separate applications of 25 pounds/1000 square feet to achieve a final amendment rate of 50 pounds/1000 square feet. Distribute evenly by machine and incorporate thoroughly into the top 6" of soil.

### 3.04 INITIAL FERTILIZATION

- A. Apply fertilizer according to manufacturer's directions.
- B. Apply starter fertilizer at 40 lbs/1000 square feet (2 lbs/nitrogen per 1000 sf) and mix into to the top 3-4" of soil.
  - 1. Do not fertilize when weather is rainy, or when rain is forecast.
  - 2. Do not allow fertilizer to spill onto pavements or hard surfaces.

### 3.05 SEEDING

- A. Water dry topsoil to depth of 4 inches at least 48 hours prior to seeding to obtain a

loose friable seed bed.

- B. Apply seed only when wind velocities are less than five (5) miles per hour.
- C. Sow half the seed with mechanical seeder.
- D. Sow remaining half of seed at right angles to first seeding pattern, using the same method.
- E. Apply seed at 5 lbs. per 1000 square feet.
- F. Roll seeded area with roller weighing no more than 150 lbs. per foot of roller width.
- G. Water seeded areas to a depth of four (4) inches.

### 3.06 PROTECTION

- A. Immediately after seeding and sodding, erect barricades and warnings to protect seeded areas from traffic until grass is established.
- B. Install jute mesh. Anchor with heavy-duty metal staples, a minimum of 6" each leg. Anchor approximately 3' o.c. and at all edges of fabric.

### 3.07 MAINTENANCE

- A. Begin maintenance immediately after seed placement.
- B. Watering:
  - 1. Keep soil moist during seed germination period.
  - 2. Supplement rainfall to produce a total depth penetration of 2 inches per day after germination.
- C. Mowing:
  - 1. When grass reaches 4 inches in height, mow to 2-1/2 inches in height.
  - 2. Maintain grass between 2" to 3" inches in height.
  - 3. Do not cut off more than 40% of grass leaf in a single mowing.
    - a. If grass has become too long between mowings, raise the mower height, mow and gradual lower mower height over a span of several mowings to reduce shock to the grass.
  - 4. Do not remove grass clippings.

- a. If grass clippings are too long, mow over a second time to shred.
- D. Reseed and mulch spots larger than 1 square foot not having uniform coverage.
- E. Maintain lawns by watering, weeding, mowing, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
- F. Provide final seasonal mowing in late November.

### 3.08 FINAL ACCEPTANCE

- A. These procedures shall be observed in field, and inspected by the Landscape Architect or Owner's representative to verify compliance with the specifications.
- B. It is the responsibility of the Contractor to deliver a lawn of a uniform stand of specified grass exhibiting a vigorous, healthy, uniformly green appearance, relatively free from insects, grubs, and other pests, free from excessive accumulation of thatch and consisting of a population of at least 90 percent permanent grass. The Contractor shall also deliver a lawn free of weeds, bare spots exceeding 4" diameter maximum, and surface irregularities. Such bare spots shall not constitute more than 2% of the total lawn area.. Maintain and protect all seeded areas until final acceptance of the Contract.
- C. If lawn areas are not acceptable at the end of November, the Contractor shall provide overseeding and one fertilization the following spring.

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. Topsoil stockpiled during site preparation operations may be re-spread if it meets the Specifications for loam.
  - 2. Supply, spread and grade additional off-site loam as necessary to provide the required depth of topsoil in planting beds and lawns.

##### 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
  - 2. Section 02200 - Earthwork
  - 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.

### PLANTING SOILS

02901-1

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 and shrubs including provision of backfill mix..
  - 2. Mulching planting beds.
  - 3. Planting maintenance.
  - 4. 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

he 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 ANSI 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; Horticultural 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.

## 2.09 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.

## 2.10 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 MULCH

- A. Provide 3" of mulch continuous on planting beds.

### 3.04 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.

### 3.05 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.

### 3.06 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.

### 3.07 GUARANTEE

- A. Trees and shrubs 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 plumb, 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 GENERAL PROVISIONS

- A. Attention is directed to the Contract and General Conditions and all Sections within Division I which are hereby made a part of this Section of the Specifications.

##### 1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following site improvements:
  - 1. Cast-in-place flush concrete curbs
  - 2. Play structure, play equipment, site furniture, fence and bollard footings
  - 3. Portion of sidewalk paving
- B. Related Work:
  - 1. Section 02200 - Earthwork
  - 2. Section 02510 - Bituminous Concrete Paving
  - 3. Section 02830 - Chain Link Fence
  - 4. Section 02800 - Site Improvements
  - 5. Section 02860 - Play Equipment

##### 1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01300 - Submittals.
  - 1. Concrete mix designs. Concrete mix design submittal shall include the following information:
    - (a) Proportions of cement, fine and coarse aggregate, and water.
    - (b) Water cement ratio, design strength, slump and air content.
    - (c) Type of cement and aggregates.
    - (d) Type and dosage of all admixtures.
    - (e) Percent of polypropylene fiber
    - (f) Range of ambient temperature and humidity for which the design is valid..
    - (g) Certification by ready-mix plant of psi of concrete mix design.
  - 2. Submit Product data for the following:
    - (a) Curing compound or curing paper.

- (b) Joint fillers, Sealants, and Sealant Primers: Provide manufacturer's product data and manufacturer's installation instructions. Provide manufacturer's color choices for sealant.

#### 1.04 REFERENCE STANDARDS

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, after notifying the Architect the most restrictive requirement shall govern.
  - 1. American Concrete Institute (ACI)
    - 212 Guide for Use of Admixtures in Concrete
    - 301 Specifications for Structural Concrete for Buildings
    - 305 Hot Weather Concreting
    - 306 Cold Weather Concreting
    - 316 Recommended Practice for Construction of Concrete Pavements and Concrete Bases
    - 347 Recommended Practice for Concrete Formwork
  - 2. American Society for Testing and Materials (ASTM):
    - A185 Welded Steel Wire Fabric for Concrete Reinforcement
    - A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
    - C33 Concrete Aggregates
    - C94 Ready-Mixed Concrete
    - C143 Slump of Portland Cement Concrete
    - C150 Portland Cement
    - C171 Sheet Materials for Curing Concrete
    - C260 Air-Entraining Admixtures for Concrete
    - C309 Liquid Membrane-Forming Compounds for Curing Concrete
    - C494 Chemical Admixtures for Concrete
    - C920 Elastomeric Joint Sealants
    - C920 Use of Elastomeric Joint Sealants
    - D1557 Moisture - Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.5-kg) Rammer and 18-in. (457-mm) Drop
    - D1752 Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
  - 3. Commonwealth of Massachusetts Highway Department, Standard Specifications for Highways and Bridges, latest edition, Construction and Materials specifications for Concrete.

#### 1.05 QUALITY ASSURANCE

- A. Maintain field records of time, date of placing, curing, and removal of forms of concrete in each portion of the work.

## 1.06 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. Use of calcium chloride, salt, or any other admixture to prevent concrete from freezing is prohibited.
- D. Protect adjacent work. Provide temporary barricades and warning lights as required for protection of project work and public safety.

## PART 2 - PRODUCTS

### 2.01 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 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.
  - 1. 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.
- C. Unless other indicated on the Drawings, minimum 28 day compressive strength shall be 4,000 psi.
- D. Concrete Aggregate: Provide ASTM C33 normal weight aggregates, 3/4" maximum size, clean, uncoated crushed stone or gravel coarse aggregate free of materials which cause staining or rust spots; fine aggregate shall be clean natural sand.
- E. Polypropylene reinforcement fibers shall be added at the rate of 1.0 lb/cubic yard of concrete.
  - 1. Provide polypropylene fibrillated fibers of multi-design ASTM C1116C/116M, Section 4.1.3 Type III. Fibers must be made of 100% virgin polypropylene fibrillated fibers of multi-design gradation as manufactured by Fibermesh, Synthetic Industries, 4019 Industry Drive, Chattanooga, Tennessee 37416; Masterfiber M70 by BASF, or an approved equal.
- F. Concrete slump shall be no less than 2" nor greater than 4" determined in accordance with ASTM C143.
- G. Concrete shall be air entrained type. Air content by volume shall be 3 to 6%.

- H. Concrete shall contain a water reducing agent to minimize the water cement ratio of the mix, at the specified slump.
- I. 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 Engineer.
- J. No concrete shall be placed by pumping methods.

## 2.02 CEMENT

- A. Cement shall be Portland Cement conforming to ASTM C150, Type II, dark color.

## 2.03 ADMIXTURES

- A. Except as otherwise specified, use of concrete admixtures shall conform to ACI 212.
  - 1. Air entraining agent shall conform to ASTM C260.
  - 2. Water reducing agent shall conform to ASTM C494, Type A.
  - 3. Water reducing agent-retarder shall conform to ASTM C494, Type D.

## 2.05 WATER

- A. Water shall conform to ASTM C94, Section 4.1.3.

## 2.06 CONCRETE REINFORCEMENT

- A. Steel reinforcing bars shall conform to ASTM A615.

## 2.07 CURING MATERIALS

- A. Type 2 Liquid Membrane-Forming Compounds for Curing Concrete shall be used in accordance with ASTM Designation C-309-58 or AASHTO Designation M140-57 or the latest revisions thereof.

## 2.08 EXPANSION JOINTS

- A. Expansion joints in pavement shall be 3/8" inch wide and shall conform to the requirements of AASHTO Designation 17-33.
  - 1. Provide sealant and sealant joint backing materials suitable for use intended and compatible with materials with which they will be in contact. Compatibility of sealant and accessories shall be verified by the sealant manufacturer.
  - 2. Joint filler shall be one piece for the full depth and width of the joint.

3. Backer rod for expansion joints shall be compressible rod of durable nonabsorptive material recommended by sealant manufacturer to prevent three-sided adhesion.
4. Sealant for horizontal joints shall be a non-staining, two component polyurethane based sealant conforming to Fed. Spec. TT-S-00227, Class A, and ASTM C920, Type M, Grade P, Class 25, Use T, with a Shore A Hardness of 30±5 or better.
5. Colors of sealant shall be selected from manufacturer's standard colors to match concrete color as closely as possible.

## 2.09 CONTROL JOINTS

- A. Tool control joints to not less than 25% of slab depth.
- B. Unless otherwise indicated on the Drawings, control joints shall be located at 10 feet o.c. maximum.
- C. Reinforcing shall continue through control joints.

## PART 3 - EXECUTION

### 3.01 GRADING

- A. Subgrade shall be compacted as required to bring the top 6 inches of subgrade material immediately below the concrete to a density of not less than 95% at optimum moisture content as determined by ASTM D1557. Subgrade compaction shall extend for a distance of at least 1 foot beyond edge of concrete.
  1. 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 removed 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.

### 3.03 JOINTING

- A. Unless otherwise indicated on the Drawings, expansion joints shall be located at 30 feet o.c. maximum.

### 3.04 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 material 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 called for, and shall be maintained in that position until concrete is placed and compacted.
- D. Except as otherwise noted, laps at joints in welded wire fabric reinforcement shall be at least 6 inches and shall be securely tied with wire.
- E. Except as otherwise specified, 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.
- H. Unless otherwise indicated on the Drawings, reinforcing shall extend within 2 inches of formwork and expansion joints. Reinforcement shall continue through construction joints.

### 3.05 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 remixed 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 Engineer.
- E. Concrete shall be thoroughly spaded, and tamped, and vibrated to secure a solid homogeneous mass, thoroughly worked around reinforcement and into corners of forms.

- F. Construction Joints: Except as otherwise specifically indicated on the Drawings beam and slab shall be considered as a single unit of operation, and all concrete for the same shall be placed continuously in order that such unit will be monolithic in construction. Should construction joints prove to be absolutely unavoidable, the same shall be located at or near the midpoints of spans. Additional construction joints shall not be made under any circumstances without the written review of the Engineer.

### 3.06 FINISHING

- A. Sidewalk paving and exposed surface of flush curb: Broom Finish.
- B. Exposed tops of footings: Smooth trowel exposed surface. Provide light broom finish.

### 3.07 CURING

- 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 finishing 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 drying, 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" and sealed with tape. 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 square feet per gallon in two applications perpendicular to each other.
  3. Curing period shall be 7 days, minimum.

### 3.08 COLD WEATHER CONCRETING

- A. Procedures shall be in accordance with provisions of ACI 306.

### 3.09 HOT WEATHER CONCRETING

- A. 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.

- B. During periods of excessively hot weather (95 degrees or above) ingredients in the concrete shall be cooled insofar as possible and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Any concrete with a temperature above 95 degrees F., when ready for placement will not be acceptable and will be rejected.
- C. Temperature records shall be maintained throughout the period of hot weather giving air temperature, general weather conditions (calm, windy, clear, cloudy, etc.) and relative humidity. Records shall include checks on temperature of concrete as delivered and after placing in forms. Data should be correlated with the progress of the work so that conditions surrounding the construction of any part of the structure can be ascertained.

### 3.10 PROTECTION OF CONCRETE SURFACES

- A. Concrete surface shall be protected from traffic or damage. If necessary 1/2 inch thick plywood sheets shall be used to protect the exposed surface.

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 Section 705.1 of the 2010 ADA Standards for Accessible Design (ADAAG).
- 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

##### 1.05 SUBMITTALS

- A. Product Data: Submit manufacture's literature describing products, installation procedures and maintenance.
- B. Samples: Submit a sample of the panel proposed to be used.

##### 1.06 QUALITY ASSURANCE

### DETECTABLE WARNING PANELS

- 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: Dark Grey conforming to Federal Color No. 36118. 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.

#### DETECTABLE WARNING PANELS

09614-2

- 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:

Test Method	Mechanical Properties	Average Value
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

DETECTABLE WARNING PANELS

09614-4

## SECTION 10430

### EXTERIOR SIGNS & 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 on new granite posts. Sign and sign posts shall both be installed by the sign vendor.
  - 2. Exact wording of sign and plaque are subject to change.
  - 3. Furnishing and installing one (1) bronze plaque with text.
  - 4. Furnishing and installing one (1) aluminum park "Welcome" sign and post.
- 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 manufacturer's 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 non-reflective vinyl film, 0.0035-inch minimum thickness, with pressure-sensitive adhesive backing, suitable for exterior applications. Color shall be as indicated.

## 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: Sand
  - 4. Background Finish: Duranodic Bronze
  - 5. Font Finish: Gloss Coat Brushed Finish
  - 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 PLAQUE INSTALLATION

- A. Install plaque in location as shown and as detailed.
- B. Edge of plaque shall be flush with adjacent paving with 1/16" lippage maximum.

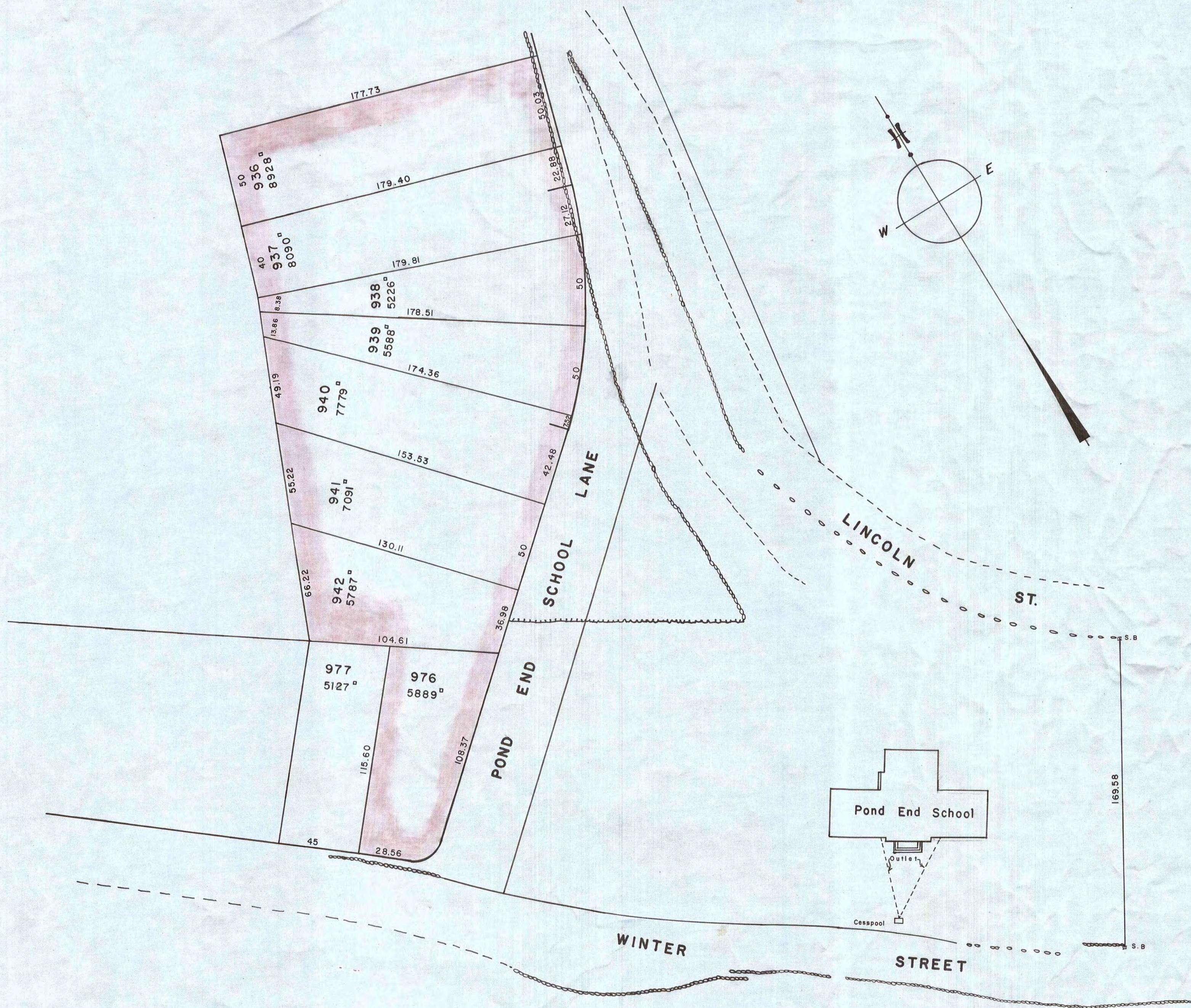
### 3.06 TOLERANCES

- 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.

### 3.07 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 re-clean as necessary immediately prior to final acceptance.

END OF SECTION



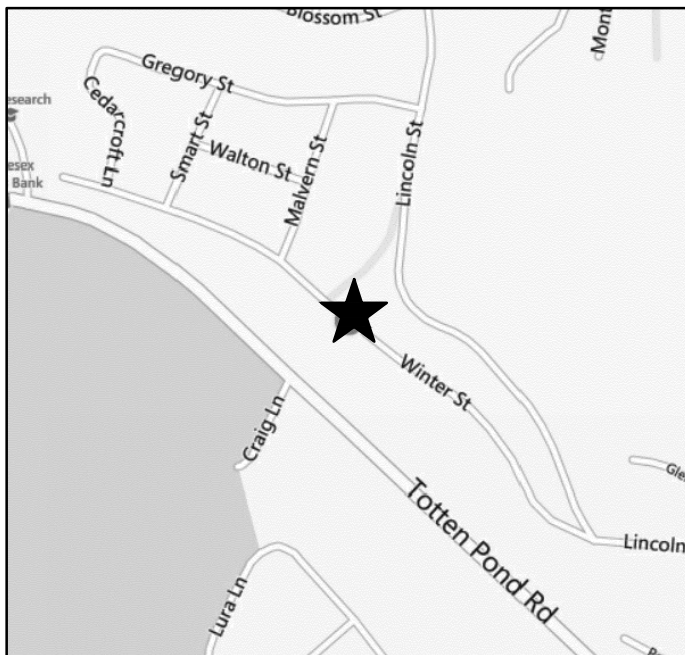
# Waltham Park Improvements Project

## IMPROVEMENTS TO POND END TOT LOT

93 WINTER STREET  
WALTHAM, MASSACHUSETTS 02451

### Locus Plan

POND END TOT LOT



**MAYOR JEANNETTE A. McCARTHY**  
**CITY OF WALTHAM**

CITY OF WALTHAM PLANNING DEPARTMENT  
119 SCHOOL STREET  
WALTHAM, MASSACHUSETTS 02451

CATHERINE CAGLE - DIRECTOR WATLHAM PLANNING DEPARTMENT  
SANDRA J. TOMASELLO - DIRECTOR WALTHAM RECREATION DEPARTMENT

JUNE 3, 2014

LANDSCAPE ARCHITECT:  
CAROLYN COONEY & ASSOCIATES

13 ELM STREET  
MILFORD, MASSACHUSETTS 01757  
TEL: (508) 478-8426 FAX: (508) 478-8607

CIVIL ENGINEER:  
SITE ENGINEERING CONSULTANTS, INC.

55 GRAPE SHOT ROAD  
SHARON, MASSACHUSETTS 02067  
TEL: (781) 784-0326 FAX: (781) 784-0492

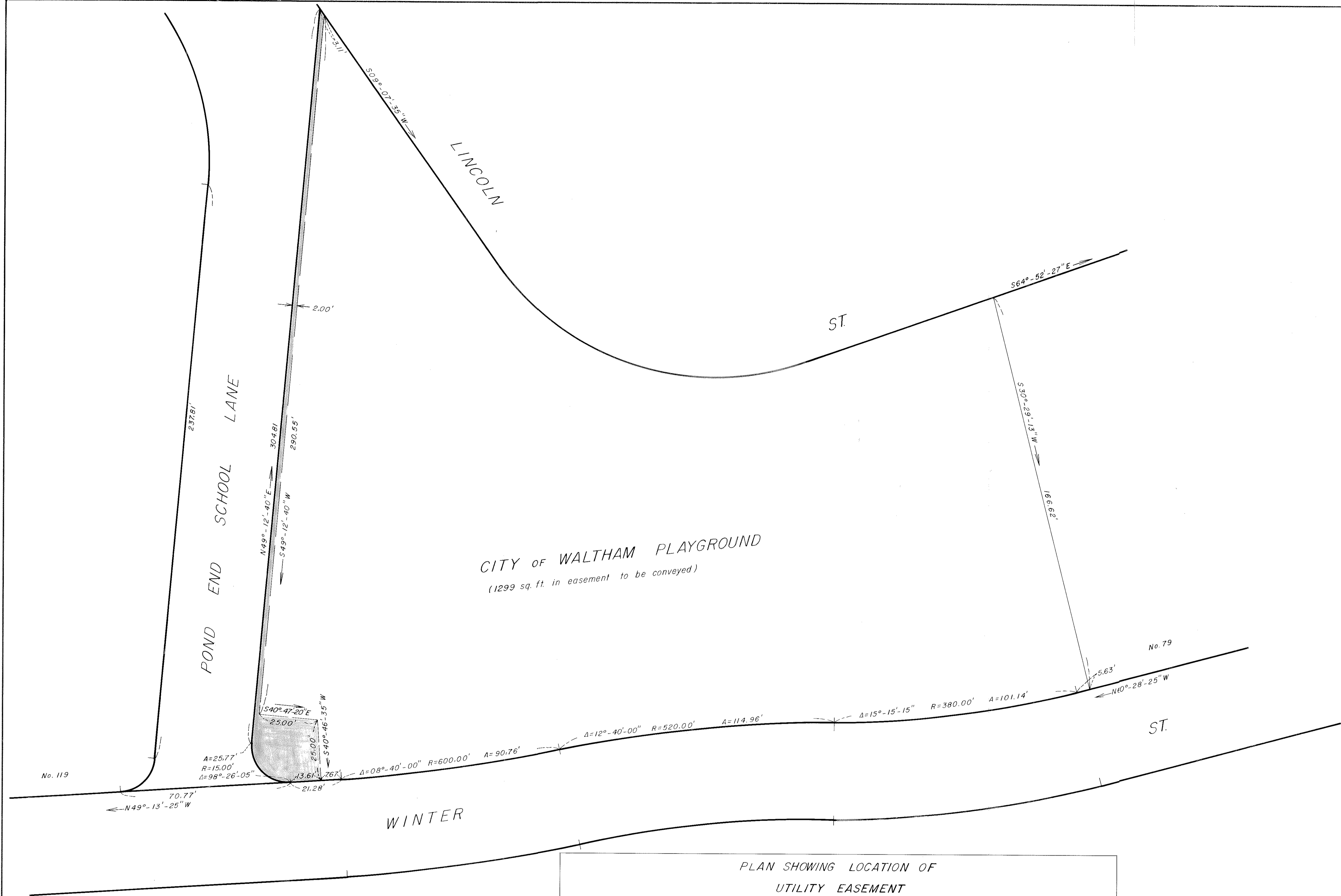
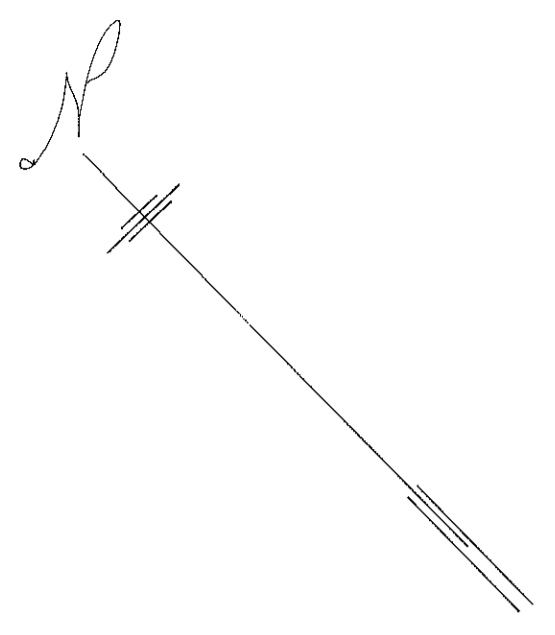
FUNDED BY:

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND  
ENVIRONMENTAL AFFAIRS  
PARC GRANT FUND

### Index of Drawings

- 1 OF 1 EXISTING CONDITIONS PLAN
- 1 OF 1 PLAN NO. 588 OF 1986 EASEMENT PLAN
- L-1 SITE PREPARATION PLAN
- L-2 MATERIALS PLAN
- L-3 LAYOUT PLAN
- L-4 GRADING & DRAINAGE PLAN
- L-5 PLANTING PLAN
- L-6 PAVING & CURBING DETAILS
- L-7 FENCING DETAILS
- L-8 PLAY AREA ENLARGEMENT
- L-9 PLAY EQUIPMENT DETAILS
- L-10 PLAY EQUIPMENT DETAILS
- L-11 PLAY EQUIPMENT DETAILS
- L-12 PLAY EQUIPMENT DETAILS
- L-13 SITE IMPROVEMENT DETAILS
- L-14 SITE FURNITURE/PLANTING DETAILS
- L-15 SIGNAGE DETAILS
- L-16 DRAINAGE DETAILS
- L-17 ALTERNATE NO. 1



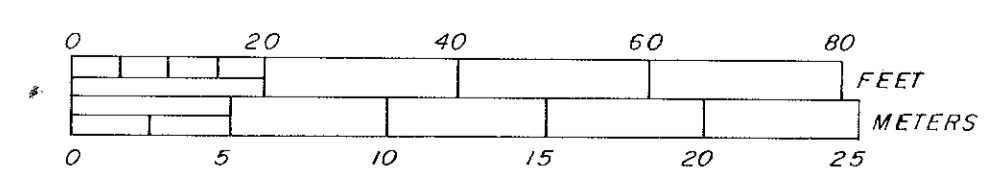


PLAN SHOWING LOCATION OF  
UTILITY EASEMENT  
TO BE CONVEYED BY  
THE CITY OF WALTHAM  
TO  
NEW ENGLAND TELEPHONE  
AT  
POND END SCHOOL LANE  
BETWEEN

WINTER ST and LINCOLN ST  
Scale: 1 inch = 20 feet  
John Mildram  
Land Surveyor  
March 17, 1986  
Newton, Mass.

Note: \_\_\_\_\_ Date \_\_\_\_\_  
Approval not required, under the Subdivision Control  
Law, by the Board of Survey & Planning.  
\_\_\_\_\_  
CLERK

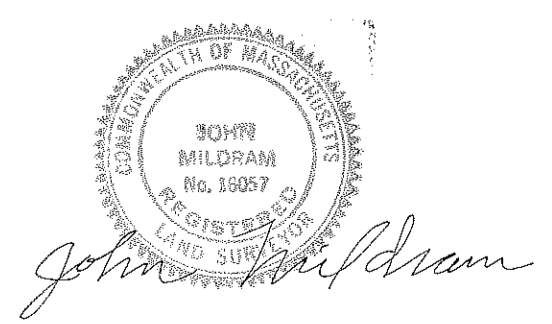
Board of Survey & Planning  
City of Waltham, Mass.



Note: \_\_\_\_\_  
I certify that this plan has been prepared  
in conformity with the rules and regulations of  
the Registers of Deeds of the Commonwealth of  
Massachusetts.

*John Mildram*  
Date: MARCH 17, 1986

FEE 25 BY J.R.  
Middlesex Registry of Deeds  
Southern District  
Cambridge, Massachusetts  
Plan No. 588 of 1986  
Rec'd MAY 7 1986  
at 12 h m p m Doc No 556  
Rec'd, Bk 16975 Pg 040  
Attest *John F. [Signature]*  
Register



PLAN NUMBER 588 OF 1986  
RECORDED BOOK 16975 PAGE 040

DEMOLITION NOTES:

GENERAL NOTES:

1. SITE INSPECTION: ALL BIDDERS ARE REQUIRED TO INSPECT THE CONSTRUCTION SITE TO VERIFY 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 AT THE LIMIT OF DEMOLITION AT BITUMINOUS AND CONCRETE PAVING.
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. PRIOR TO ANY EXCAVATION, CONFIRM IN WRITING TO THE LANDSCAPE ARCHITECT AND CITY THAT YOU HAVE CONTACTED: (1) "DIG SAFE" (811) TO MARK THE LOCATION OF RECORDED UTILITIES, AND (2) THE CITY ENGINEERING DEPARTMENT FOR ADDITIONAL SITE INFORMATION. THE CONTRACTOR SHALL PROVIDE THE "DIG SAFE" NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED BOTH ON AND OFF THE PROJECT SITE. DIG-SAFE DOES NOT PROVIDE THE LOCATION OF TELEPHONE AND CABLE LINES. CONTACT THE TELEPHONE AND COMMUNICATION COMPANIES TO VERIFY THE LOCATION OF CABLES.
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. NOTIFY THE 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 BE RESPONSIBLE FOR PROTECTING THE SAFETY OF THE PUBLIC THROUGH ERECTION OF FENCES AND BARRIERS AS NECESSARY AND AS REQUESTED BY THE CITY.
8. THE CONTRACTOR SHALL PROTECT 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.
9. RESTORE ALL AREAS DISTURBED BY DEMOLITION TO LAWN, UNLESS SCHEDULED FOR OTHER SURFACING.

SPECIAL NOTES:

1. FOR LOCATION OF UTILITY EASEMENT, SEE SHEET 1 OF 1, PLAN NO 588 OF 1986 EASEMENT PLAN.
2. AT LEAST ONE WEEK PRIOR TO DEMOLITION OR EXCAVATION WITHIN THE UTILITY EASEMENT, NOTIFY ELLEN JOY, VERIZON ENGINEERING DIVISION (781-935-3156, ellen.m.joy@verizon.com). THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ALL ABOVE GROUND AND BELOW GROUND UTILITIES WITHIN THE EASEMENT, INCLUDING BUT NOT LIMITED TO HAND EXCAVATION WHERE NECESSARY.
3. THE LOCATION AND QUANTITY OF EROSION CONTROL SHOWN IS THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROLS AS NECESSARY TO STABILIZE SLOPES AND RENDER THE SITE EROSION-FREE.
4. THE TEMPORARY CONSTRUCTION FENCING SHOWN IS THE MINIMUM REQUIREMENT. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL FENCING NECESSARY TO PROTECT PUBLIC SAFETY.
5. REFER TO GRADING & DRAINAGE PLAN L-4 AND L-16 FOR AREA AND DEPTHS TO BE EXCAVATED FOR DRAINAGE SYSTEM.
6. TRANSPORT EXISTING FREE-STANDING METAL PICNIC TABLE TO STORAGE LOCATION AT PROSPECT HILL PARK, 322 TOTTEN POND ROAD, WALTHAM, MA. FOR RELOCATION WITHIN THE PARK AT THE COMPLETION OF CONSTRUCTION AS DIRECTED BY THE OWNER.
7. REFER TO SHEET L-17 FOR DEMOLITION ASSOCIATED WITH ALTERNATE NO. 1.
8. SALVAGED GRANITE CURB MAY BE REUSED IF IT IS UNBROKEN, GREATER THAN 2' IN LENGTH, AND OF CORRECT DIMENSION FOR NEW ALIGNMENT.
9. PROVIDE PARK CLOSURE SIGN AND PROJECT IDENTIFICATION SIGN AS SPECIFIED IN SECTION 01500-TEMPORARY FACILITIES AND CONTROLS.
10. FOR CONTRACT LIMIT LINE, REFER TO SHEET L-2, MATERIALS PLAN.

DEMOLITION LEGEND

- BITUMINOUS CONCRETE PAVING TO BE REMOVED & DISPOSED OF
- EXIST PLAY AREA: REMOVE & DISPOSE OF EQUIPMENT, FOOTINGS, SURFACING & WOOD CURBING
- EXIST LAWN OR GRAVEL. REMOVE & DISPOSE OF AS NECESSARY TO ACCOMMODATE NEW SITE IMPROVEMENTS.
- EXISTING WOODS/OVERGROWTH. CLEAR AND GRUB VEGETATION TO LIMITS SHOWN. REMOVE ALL STUMPS AND SURFACE BOULDERS.
- EXIST. 48" HT. CHAIN LINK FENCE - REMOVE AND DISPOSE OF
- REMOVE EXISTING TREE INCLUDING STUMP
- REMOVE & DISPOSE OF EXISTING BOLLARDS & FOOTINGS (6 TOTAL)
- EXISTING BOULDER - 5 TOTAL  
RELOCATE AS DIRECTED BY THE LANDSCAPE ARCHITECT
- TREE PROTECTION, DETAIL 5/L13
- 6' HT. TEMPORARY CHAIN LINK CONSTRUCTION FENCING
- STRAW WATTLE EROSION CONTROL DEVICE - SEE DETAIL 4/L-13
- REMOVE & DISPOSE OF GRANITE CURB. REMOVE TO THE NEAREST JOINT.

REMOVE & DISPOSE OF WOOD CURBING, MULCH AND SWINGSET, INCLUDING FOOTINGS

EXISTING TREES TO REMAIN & BE PROTECTED

PROVIDE 6' HT. TEMP PERIMETER CL CONSTRUCTION FENCING FOR DURATION OF SITE OPERATIONS

PROVIDE 6' HT. TEMP. CL FENCING TO COMPLETELY ENCLOSE PLAY AREA DURING CONSTRUCTION OF PLAY ELEMENTS

CLEAR VEGETATION AS NECESSARY TO ACCOMMODATE NEW 12' MAINTENANCE GATE, R & D GRAVEL PILE

REMOVE & STOCKPILE BOULDERS FOR RELOCATION AS DIRECTED BY THE LANDSCAPE ARCHITECT (5 TOTAL)

2 EXISTING TREES TO REMAIN PRUNE LOWER BRANCHES OF DEAD WOOD & REMOVE UP TO 10' HT.

REMOVE & DISPOSE OF WOOD CURBING, SAND & PLAY EQUIPMENT, INCLUDING FOOTINGS

REMOVE & RESET GRANITE CURB INLET

REMOVE & DISPOSE OF SIX (6) BOLLARDS, INCLUDING FOOTINGS

R & D APPROX. 26' OF EX. GRANITE CURB. REMOVE TO NEAREST JOINT.

EX. UTILITY BOXES & WIRES TO BE PROTECTED, TYPICAL SEE SPECIAL NOTE #2

EXISTING SHRUBS TO REMAIN

REMOVE TWO COLUMNAR CEDARS

END OF EX. 4'HT. C.L. FENCNG

EXISTING TREELINE, TYP.

REMOVE & DISPOSE OF EX. TURF, TOPSOIL & SUBSOIL TO ACCOMMODATE NEW SURFACING AND IMPROVEMENTS.

REMOVE AND DISPOSE OF CONCRETE SLABS

REMOVE & DISPOSE OF WOOD CURBING, MULCH & ALL PLAY EQUIPMENT, INCLUDING FOOTINGS

REMOVE AND DISPOSE OF EXISTING 4' HT. CHAIN LINK FENCING & GATE, INCLUDING FOOTINGS

REMOVE & DISPOSE OF TWO (2) CURB CORNERS

EXISTING TREELINE, TYP.

CLEAR & GRUB EXISTING VEGETATION TO LIMITS SHOWN, APPROX. 8600 SF.

REMOVE TO 112 CONTOUR

GRASS EXISTING TREELINE, TYP.

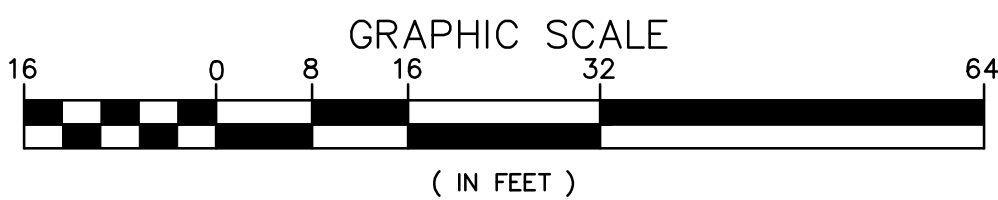
TEMPORARY 6' HT. CHAIN LINK CONSTRUCTION FENCE, TYP.

EXISTING VEGETATON TO REMAIN WITHIN 20' OF PROPERTY LINE.

END OF EXISTING 4' HT. CHAIN LINK FENCING

EXISTING TREE TO REMAIN & BE PROTECTED, TYP. CLEAR AROUND BASE AND REMOVE VINES FROM TREE

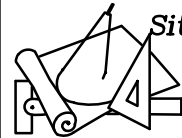
STRAW WATTLE



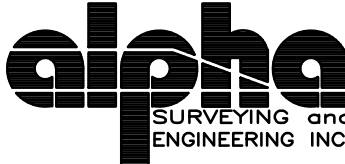
Carolyn Cooney & Associates

Landscape Architecture / Planning

13 Elm Street, Milford, MA 01757  
Telephone 508 478 8426, Facsimile 508 478 8607



Site Engineering Consultants, Inc.  
55 Grape Shot Road  
Sharon, Massachusetts 02067  
TEL: (781) 784-0326  
FAX: (781) 784-0492  
CONSULTING CIVIL ENGINEERS

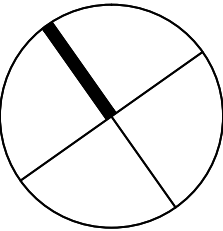


ALPHA SURVEYING AND ENGINEERING INC.

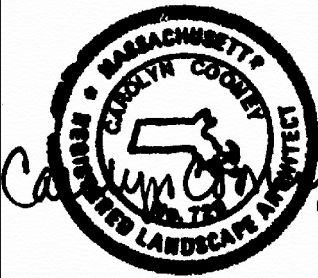
695 WAREHAM STREET  
MIDDLEBOROUGH, MASSACHUSETTS 02346  
(508) 295-5505

No.	Description	Date

REVISIONS



North



Project:

CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
WALTHAM, MA 02451

Prepared For:

CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453

TITLE:

SITE PREPARATION  
PLAN

Scale 1" = 16' Date JUNE 3, 2014  
Drawn By CCC  
Checked By DB  
Approved By CCC  
Project No. 1313.00

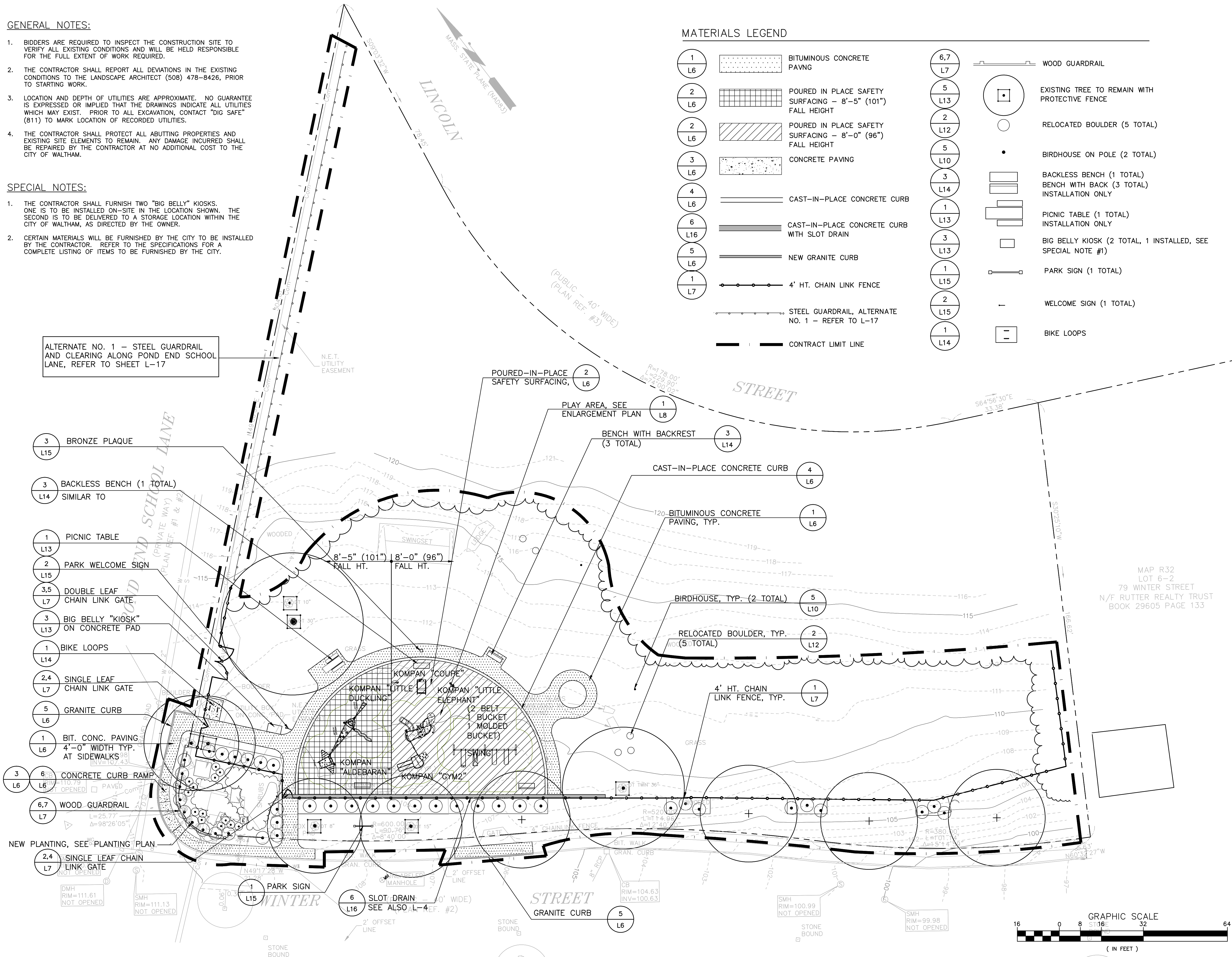
DWG No.

L-1


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4. 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.

1. THE CONTRACTOR SHALL FURNISH TWO "BIG BELLY" KIOSKS. ONE IS TO BE INSTALLED ON-SITE IN THE LOCATION SHOWN. THE SECOND IS TO BE DELIVERED TO A STORAGE LOCATION WITHIN THE CITY OF WALTHAM, AS DIRECTED BY THE OWNER.
2. CERTAIN MATERIALS WILL BE FURNISHED BY THE CITY TO BE INSTALLED BY THE CONTRACTOR. REFER TO THE SPECIFICATIONS FOR A COMPLETE LISTING OF ITEMS TO BE FURNISHED BY THE CITY.


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Sharon, Massachusetts 02067  
TEL: (781) 784-0326  
FAX: (781) 784-0492  
**CONSULTING CIVIL ENGINEERS**

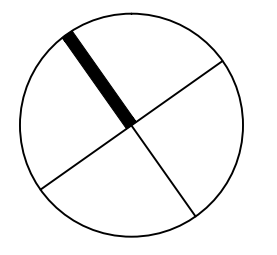


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695 WAREHAM STREET  
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(508) 295-5505

No.	Description	Date
-----	-------------	------

## REVISIONS



Project:

**CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
WALTHAM, MA 02451**

Prepared For:

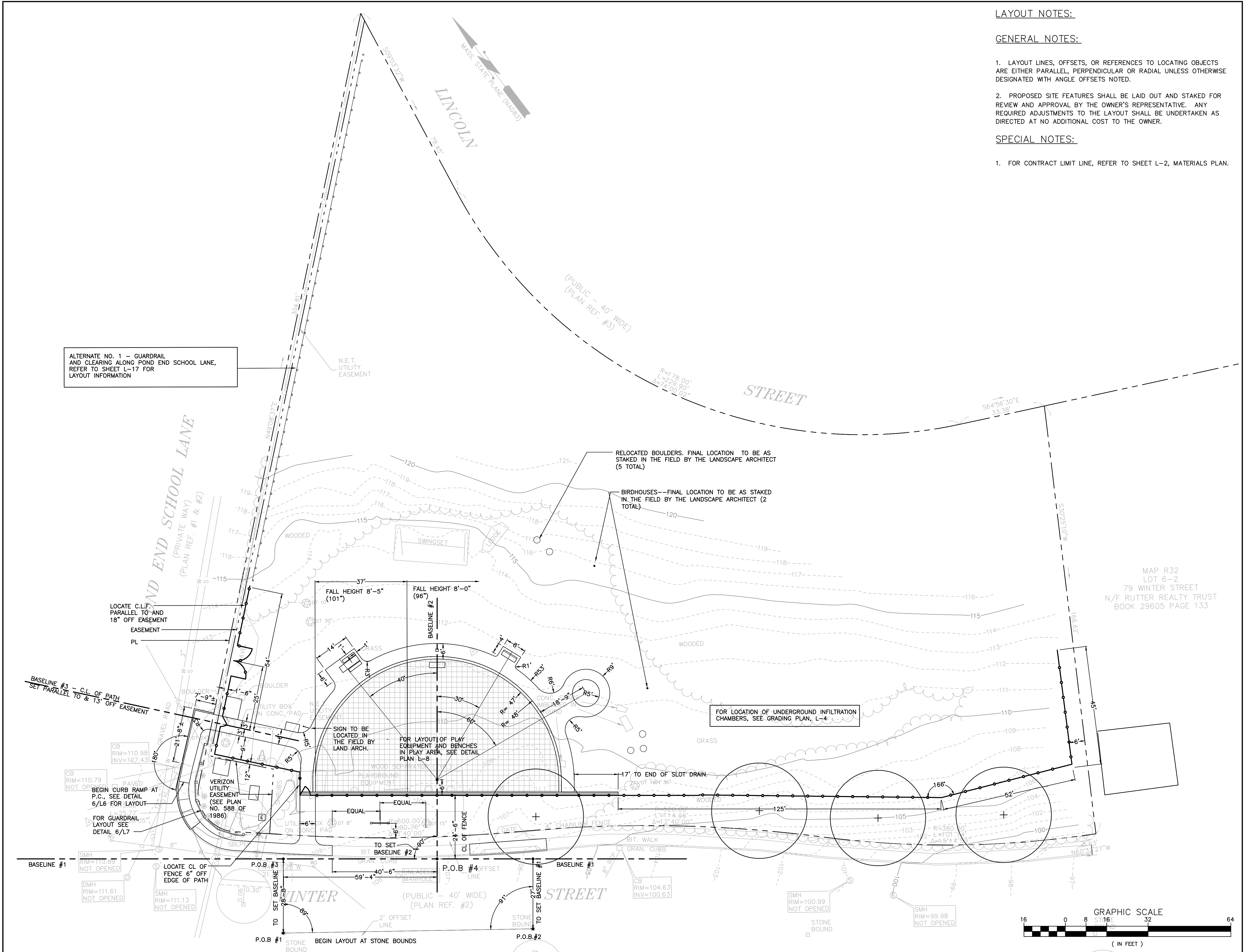
**CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453**

TITLE:

**MATERIALS  
PLAN**

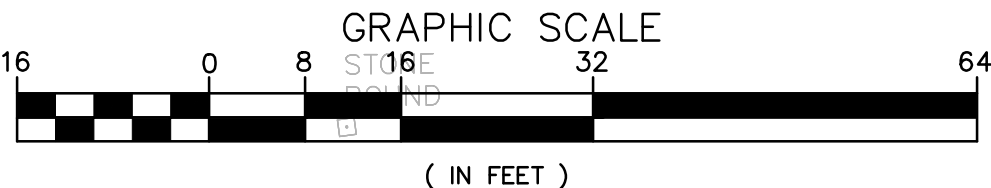
Scale 1" = 16' Date JUNE 3, 2014  
 Drawn By CCC  
 Checked By DB  
 Approved By CCC  
 Project No. 1313.00

DWG No. **L-2**



### LAYOUT NOTES:

**Carolyn Cooney &  
Associates**

1. PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
2. WALKWAYS AND SAFETY SURFACING SHALL HAVE A CROSSSPITCH OF NOT MORE THAN .2%.
3. PROVIDE A SMOOTHLY GRADED TRANSITION WHERE NEW GRADING MEETS EXISTING GRADES.
4. PAVEMENTS SHALL BE SLOPED TO DRAIN.

1. POND END TOT LOT WAS THE SITE OF A FORMER SCHOOL BUILDING WHICH WAS DEMOLISHED ON SITE. IT IS EXPECTED THAT EXCAVATION WILL INCLUDE BUILDING DEBRIS. BUILDING DEBRIS SHALL BE CONSIDERED UNCLASSIFIED EXCAVATION INCLUDED WITHIN THE LUMP SUM CONTRACT PRICE EXCEPT FOR SPECIFIC CONDITIONS DEFINED IN SPECIFICATIONS SECTION 02200 EARTHWORK. REFER TO APPENDIX A IN THE SPECIFICATIONS, FOR LOCATION OF FORMER SCHOOL BUILDING.
2. BEGIN LAYOUT OF GRADES AT NEW WINTER ST. ENTRANCE TO ENSURE AN ACCESSIBLE ROUTE OF NOT MORE THAN 5% GRADE, AND A 4' LEVEL (2% MAX) AREA IN FRONT OF THE GATE. REFER TO GATE DETAIL 4/L-7 FOR GRADING AT BOTH ENTRANCE GATES.
3. FOR CONTRACT LIMIT LINE REFER TO SHEET L-2, MATERIALS PLAN.

0" EXIST. GRADE = 110.5

8" SANDY LOAM A 109.83

LOAM  
FILL  
AND  
CONSTRUCTION  
DEBRIS  
(BRICKS, WOOD,  
CINDERS, ETC.)

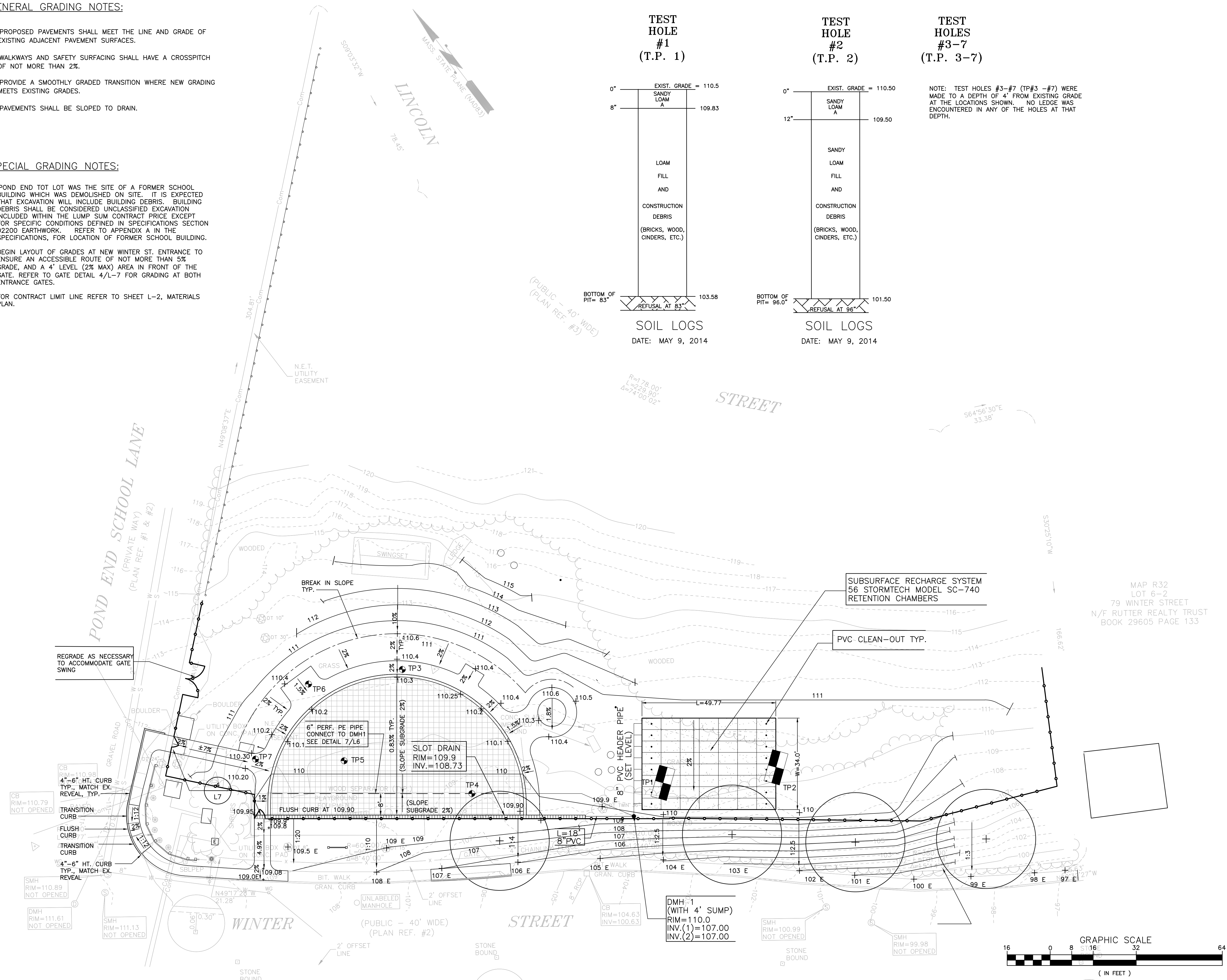
83" REFUSAL AT 83"

103.58

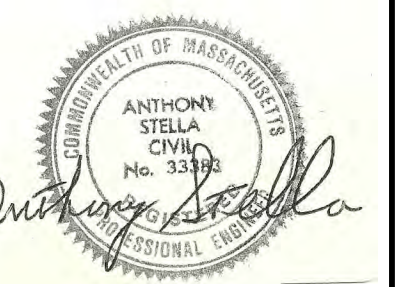
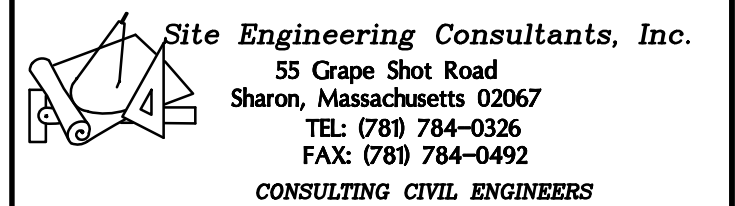
BOTTOM OF  
PIT = 83"

NOTE: TEST HOLES #3-#7 (TP#3 -#7) WERE MADE TO A DEPTH OF 4' FROM EXISTING GRADE AT THE LOCATIONS SHOWN. NO LEDGE WAS ENCOUNTERED IN ANY OF THE HOLES AT THAT DEPTH.

SOIL LOGS  
DATE: MAY 9, 2014



13 Elm Street, Milford, MA 01757  
Telephone 508 478 8426, Facsimile 508 478 8607




No.	Description	Date
-----	-------------	------

North

MASSACHUSETTS  
COUNTY  
LANDSCAPE

CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
WALTHAM, MA 02451

CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453

## GRADING & DRAINAGE PLAN

Scale 1" = 16' Date JUNE 3, 2014  
 Drawn By CCC  
 Checked By DB  
 Approved By AS  
 Project No. 1313.00

DWG No.

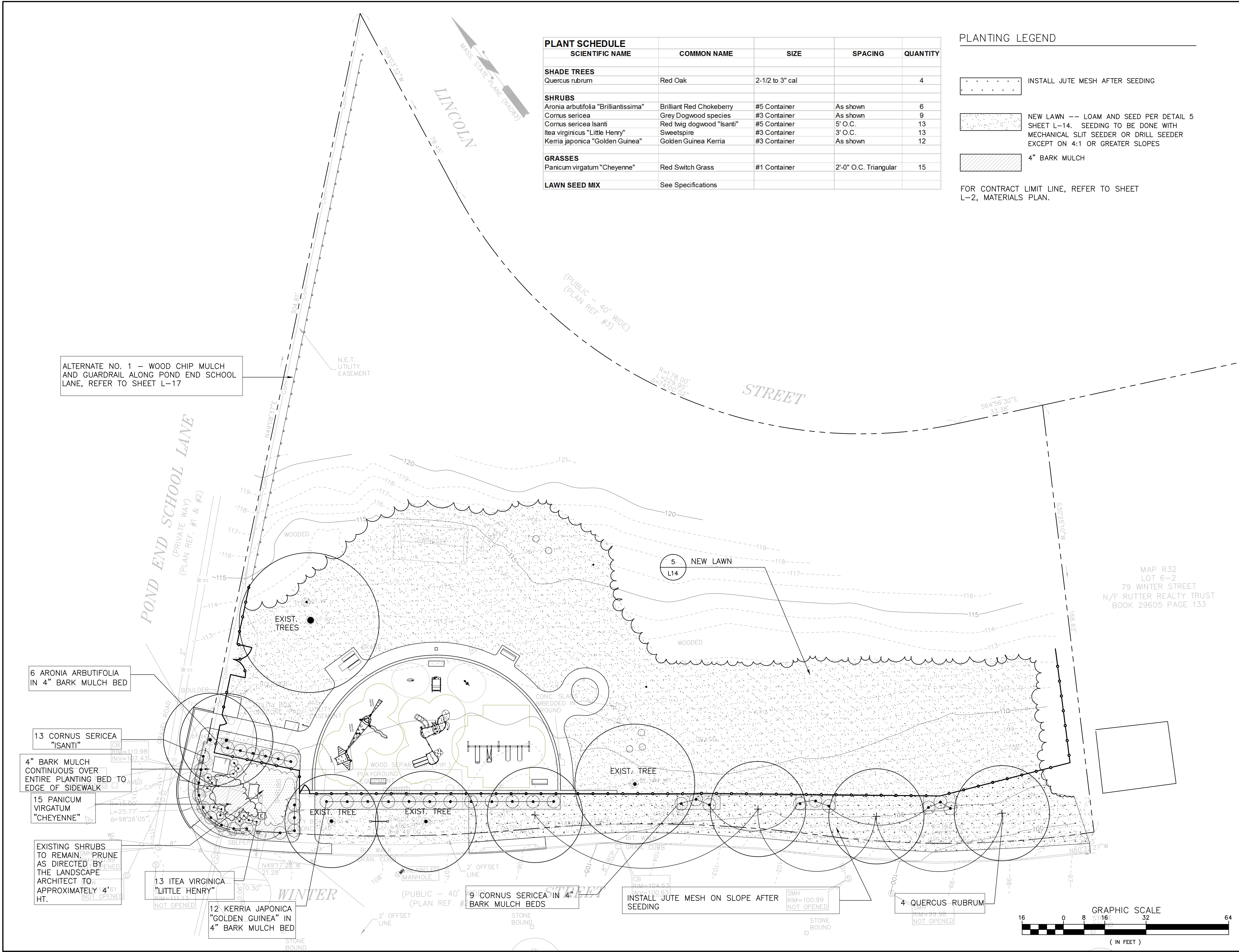
**L-4**

PLANT SCHEDULE				
SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	QUANTITY
<b>SHADE TREES</b>				
Quercus rubrum	Red Oak	2-1/2 to 3" cal		4
<b>SHRUBS</b>				
Aronia arbutifolia "Brilliantissima"	Brilliant Red Chokeberry	#5 Container	As shown	6
Cornus sericea	Grey Dogwood species	#3 Container	As shown	9
Cornus sericea Isanti	Red twig dogwood "Isanti"	#5 Container	5' O.C.	13
Itea virginicus "Little Henry"	Sweetspire	#3 Container	3' O.C.	13
Kerria japonica "Golden Guinea"	Golden Guinea Kerria	#3 Container	As shown	12
<b>GRASSES</b>				
Panicum virgatum "Cheyenne"	Red Switch Grass	#1 Container	2'-0" O.C. Triangular	15
<b>LAWN SEED MIX</b>				
	See Specifications			

PLANTING LEGEND

- INSTALL JUTE MESH AFTER SEEDING
- NEW LAWN --- LOAM AND SEED PER DETAIL 5 SHEET L-14. SEEDING TO BE DONE WITH MECHANICAL SLIT SEEDER OR DRILL SEEDER EXCEPT ON 4:1 OR GREATER SLOPES
- 4" BARK MULCH

FOR CONTRACT LIMIT LINE, REFER TO SHEET L-2, MATERIALS PLAN.

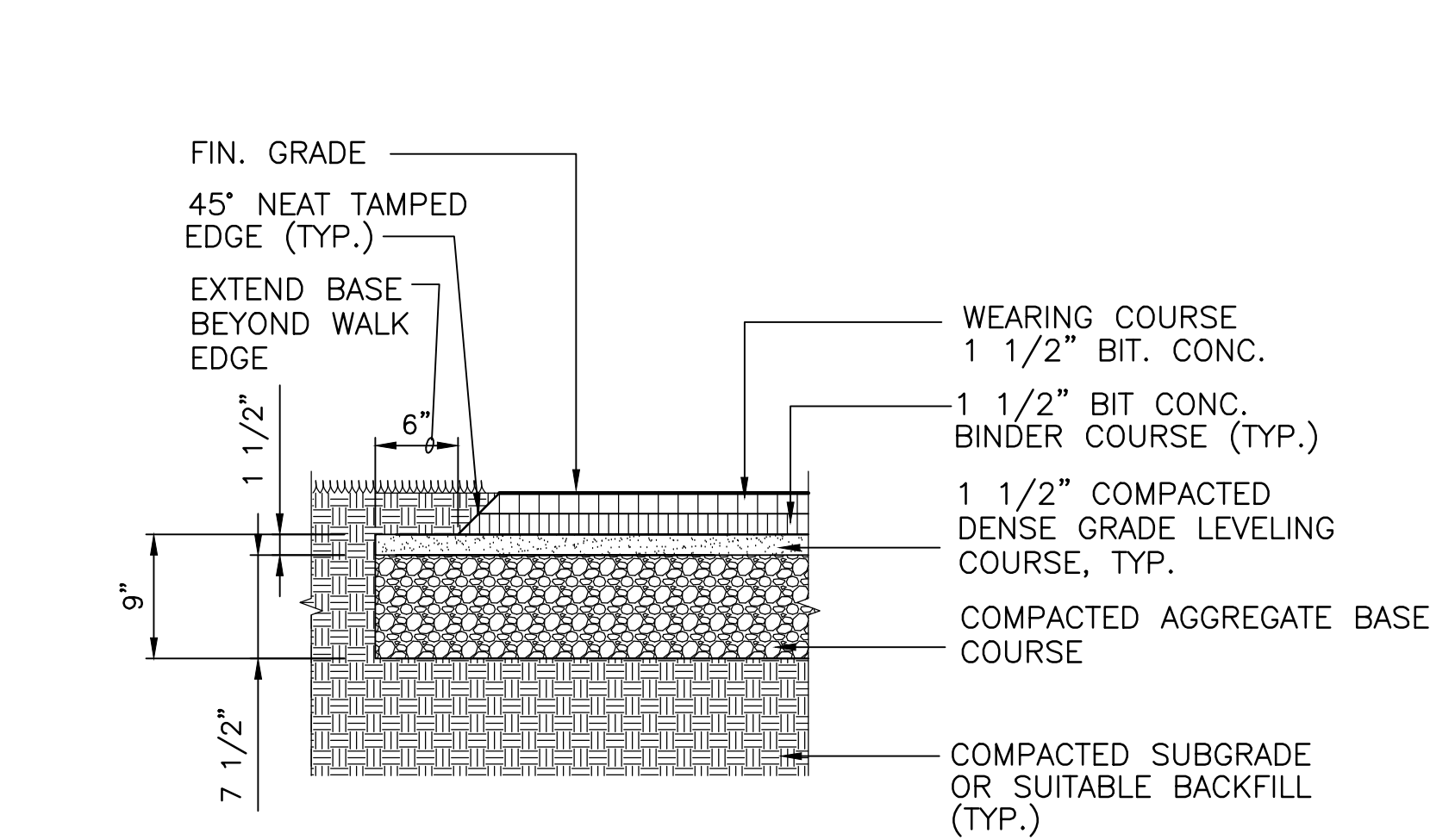


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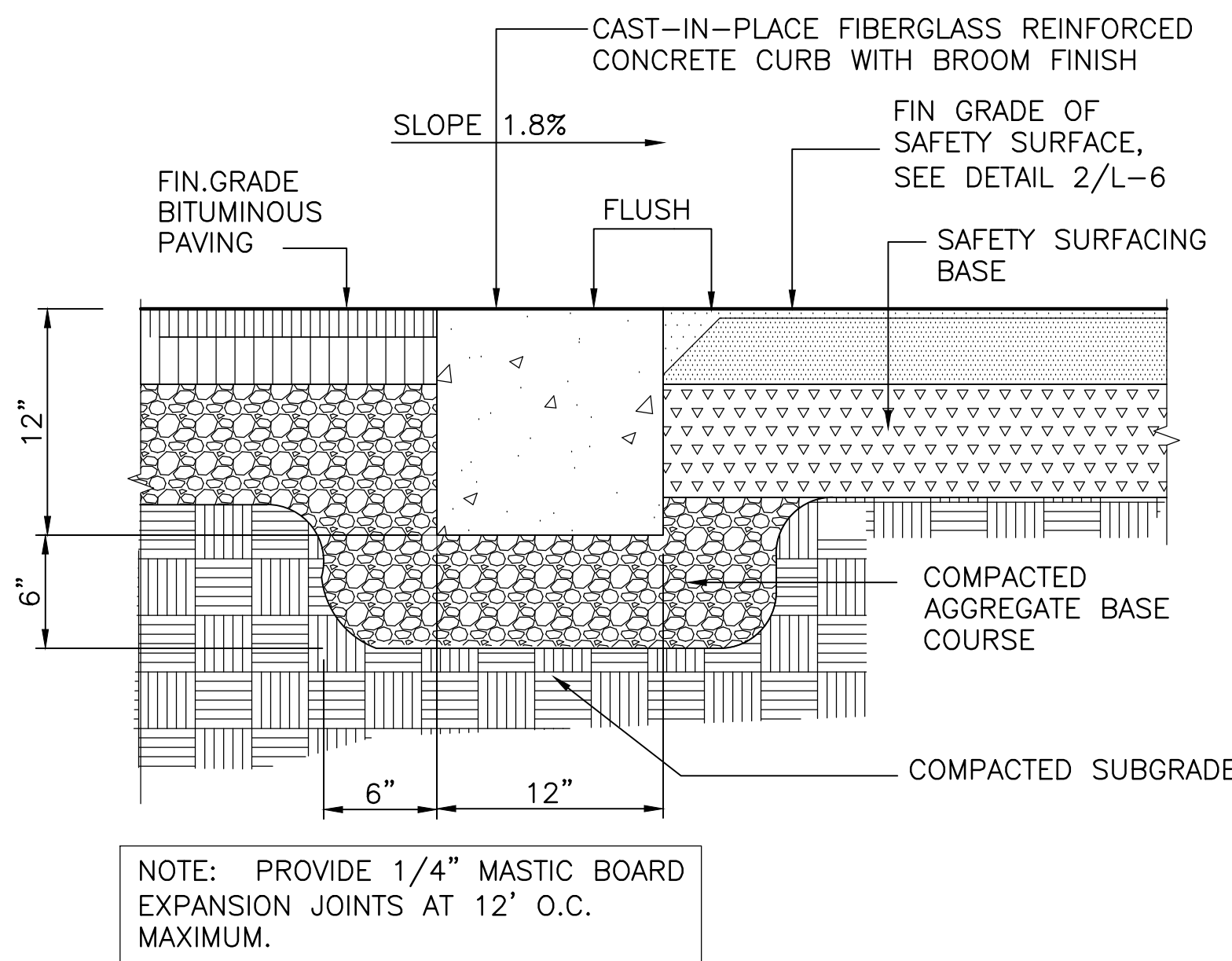
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695 WAREHAM STREET  
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No.	Description	Date
REVISIONS		
Project:		
CITY OF WALTHAM POND END TOT LOT 8 WINTER STREET WALTHAM, MA 02451		
Prepared For:		
CITY OF WALTHAM DEPARTMENT OF RECREATION 510 MOODY STREET WALTHAM, MA 02453		
TITLE:		
PLANTING PLAN		
Scale 1"=16' Date JUNE 3, 2014		
Drawn By CCC		
Checked By DRB		
Approved By CCC		
Project No. 1313.00		
DWG No.	L-5	



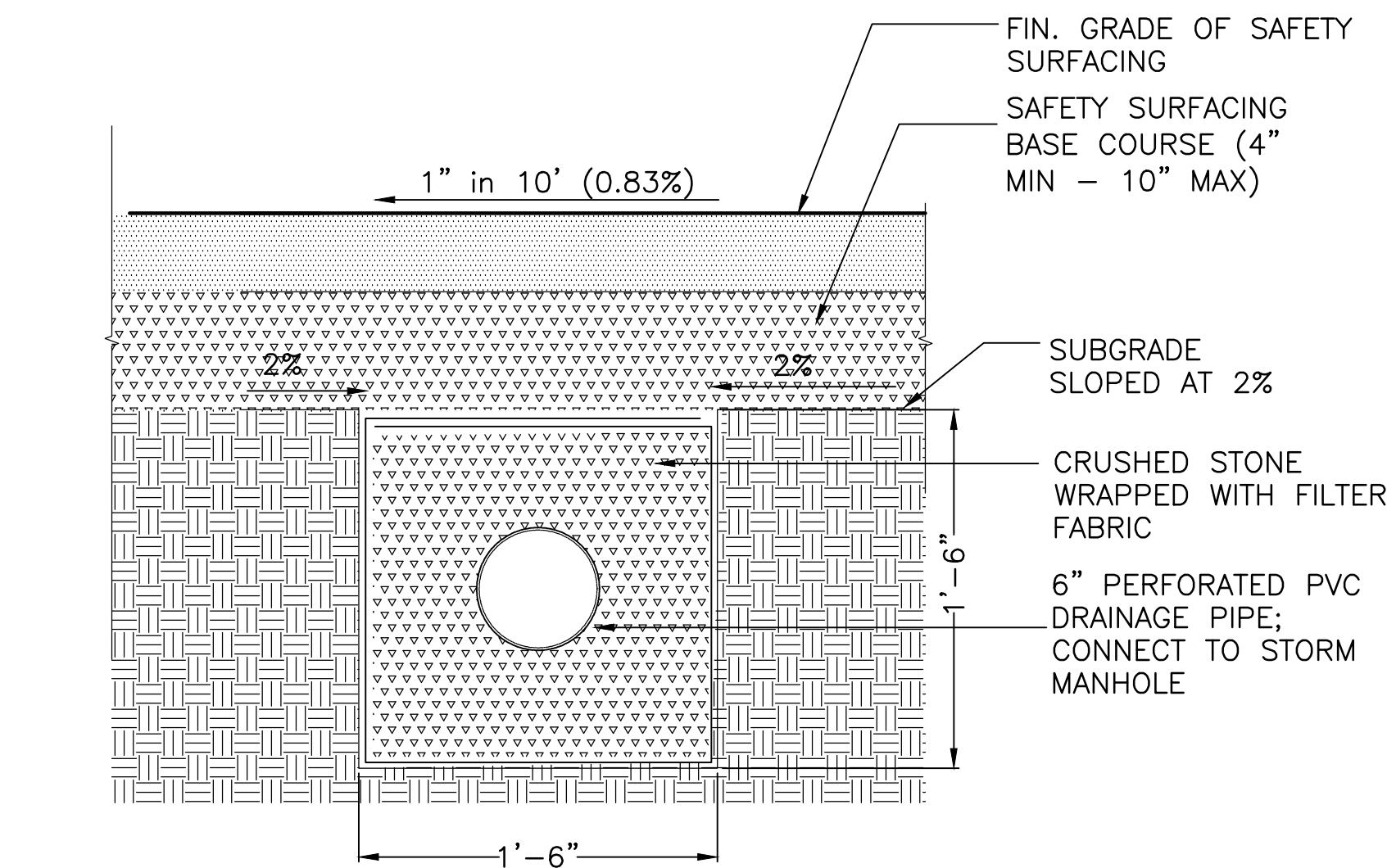
**SECTION**

**1** BITUMINOUS CONCRETE PAVEMENT  
1" = 1'-0"



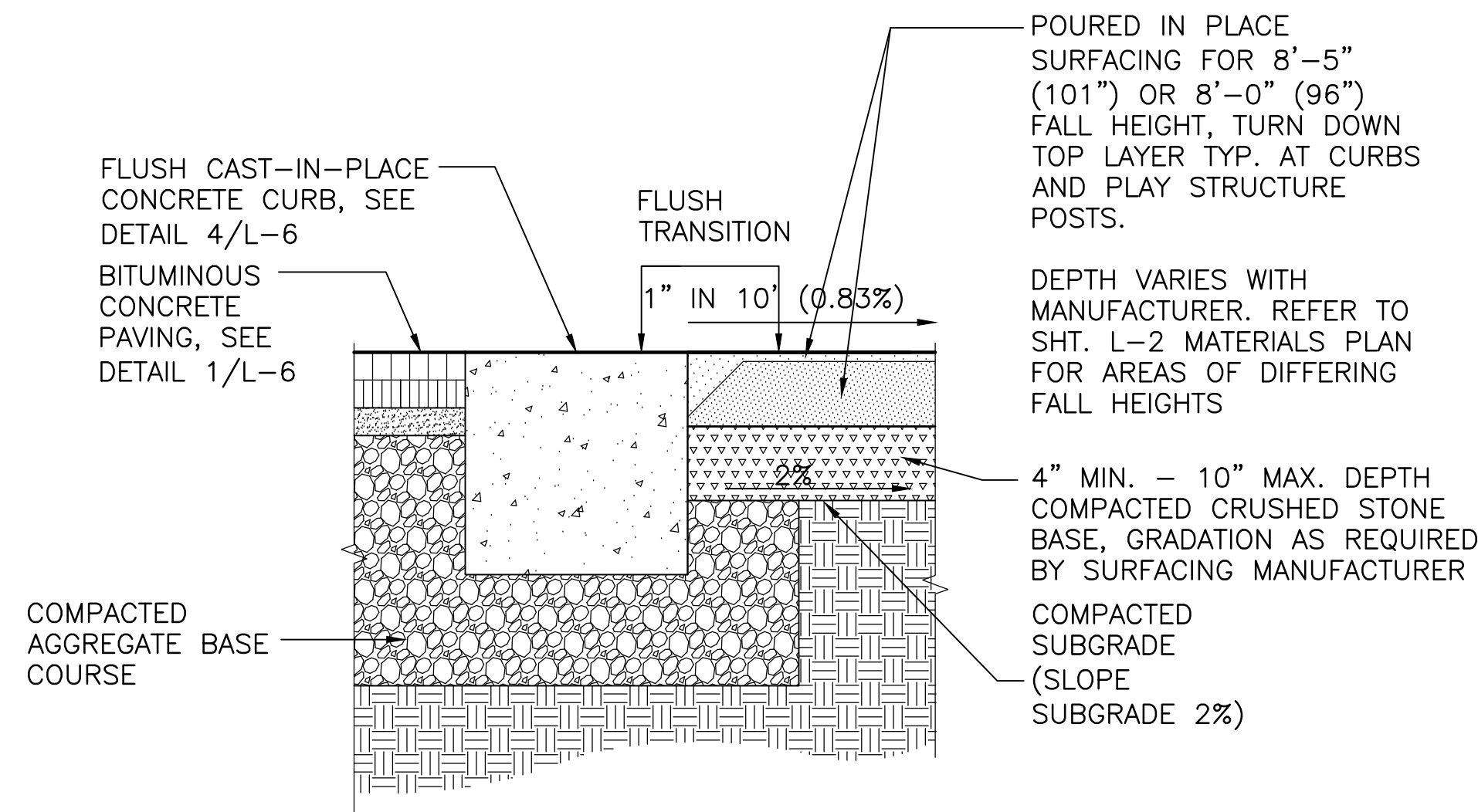
**SECTION**

**4** CAST-IN-PLACE CONCRETE CURB  
1-1/2" = 1'-0"



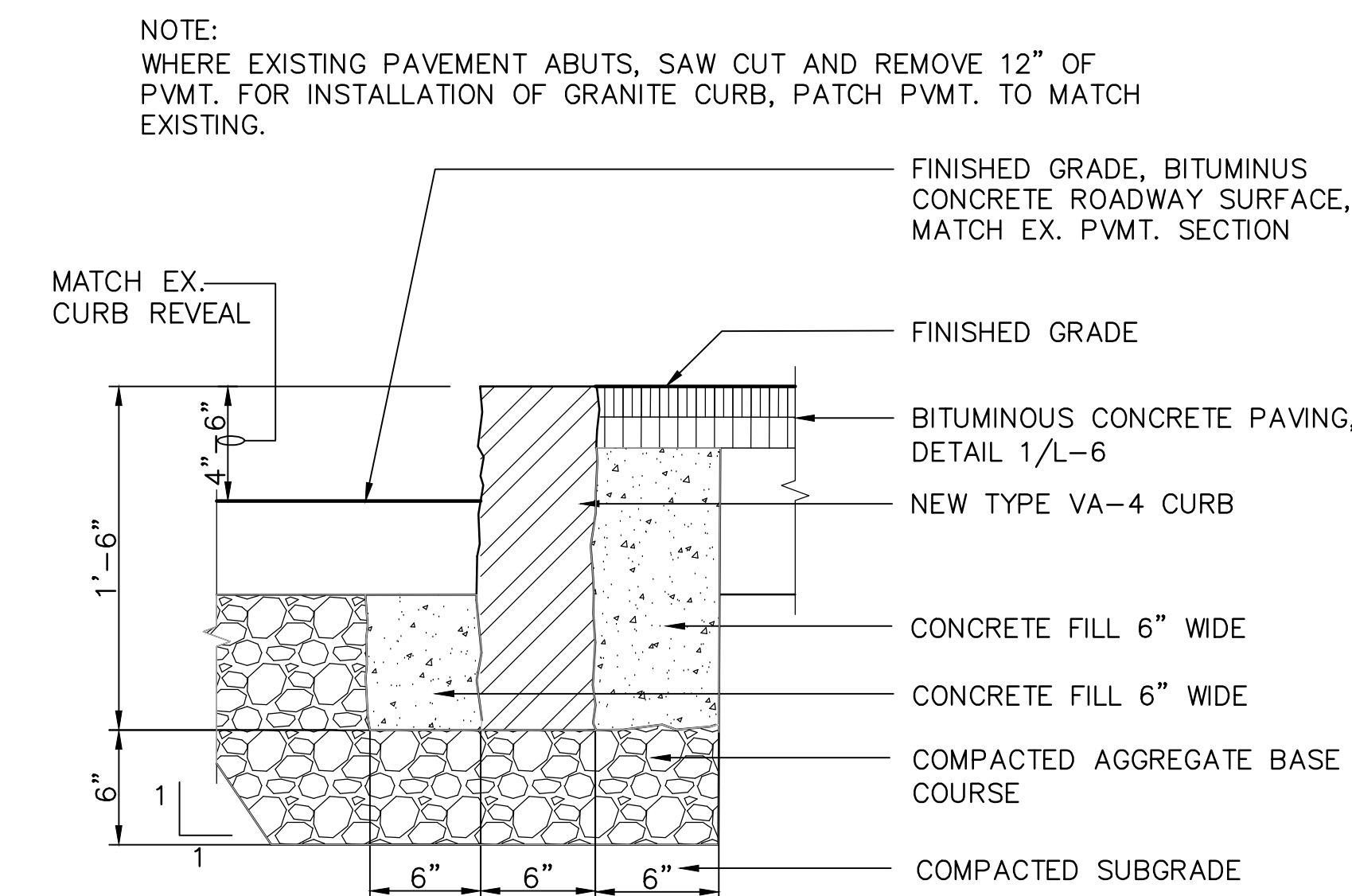
**SECTION**

**7** PERFORATED PIPE DRAIN AT PLAYGROUND AREA  
1-1/2" = 1'-0"



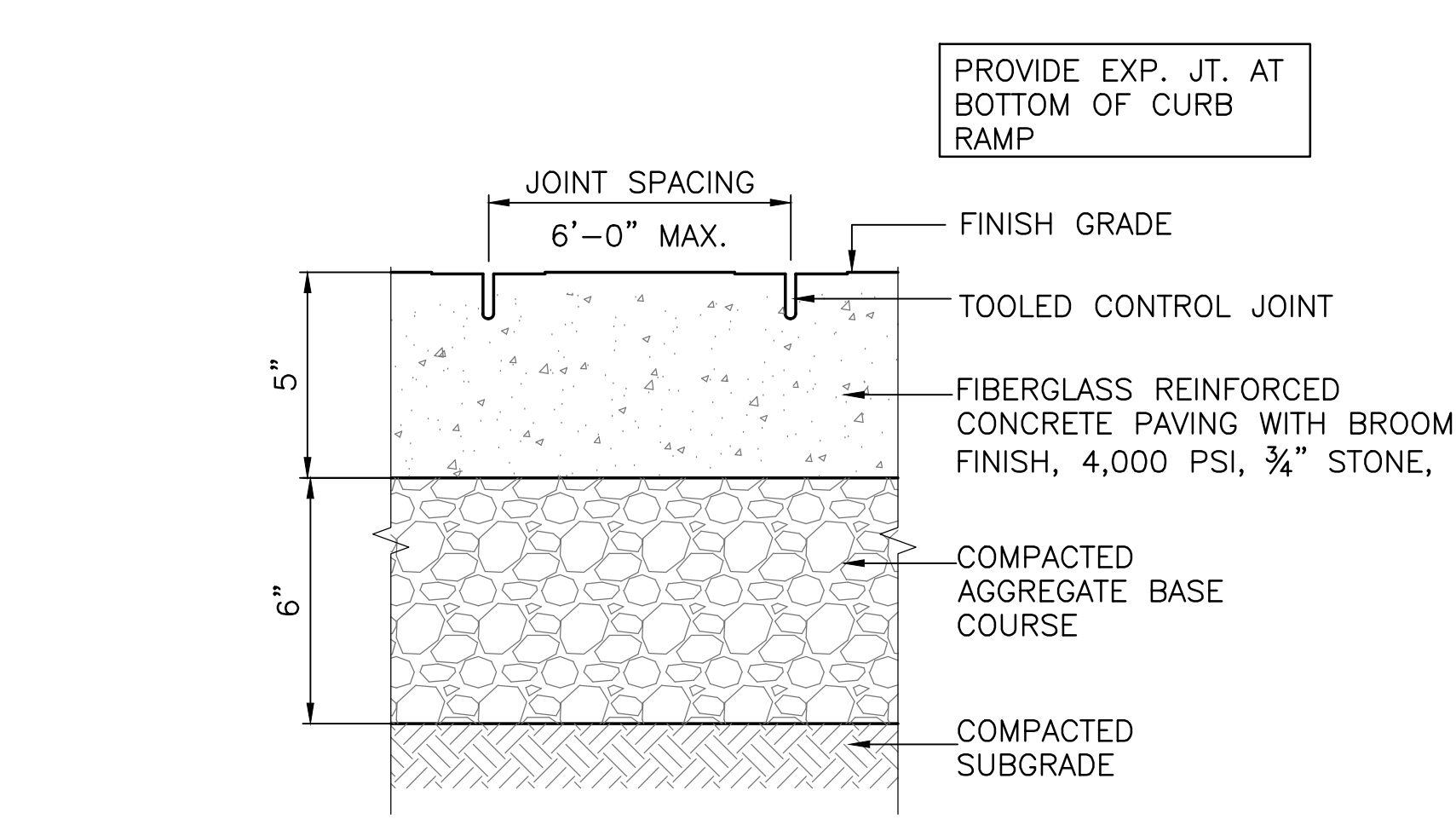
**SECTION**

**2** POURED-IN-PLACE (PIP) SAFETY SURFACING  
1-1/2" = 1'-0"



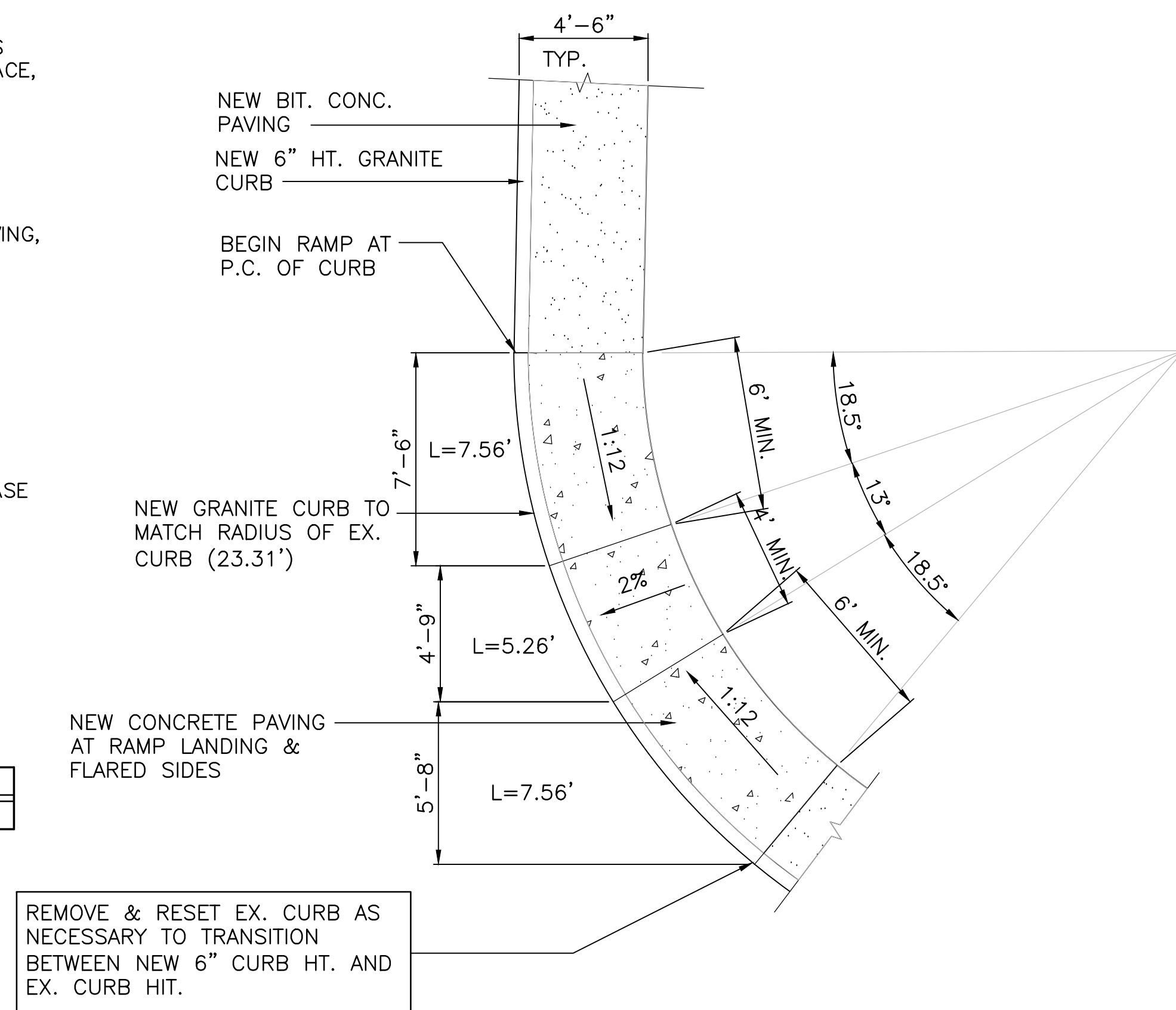
**SECTION**

**5** GRANITE CURB  
1-1/2" = 1'-0"



**SECTION**

**3** CONCRETE PAVING  
3" = 1'-0"



**PLAN**

**6** HC CURB RAMP AT POND END SCHOOL LANE  
3" = 1'-0"

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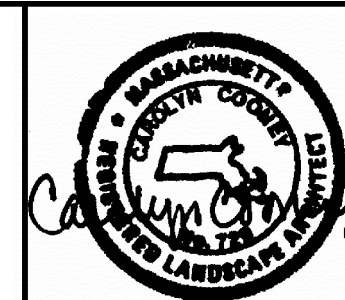
**Site Engineering Consultants, Inc.**  
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No.	Description	Date
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REVISIONS		



Project:

**CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
WALTHAM, MA 02451**

Prepared For:

**CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453**

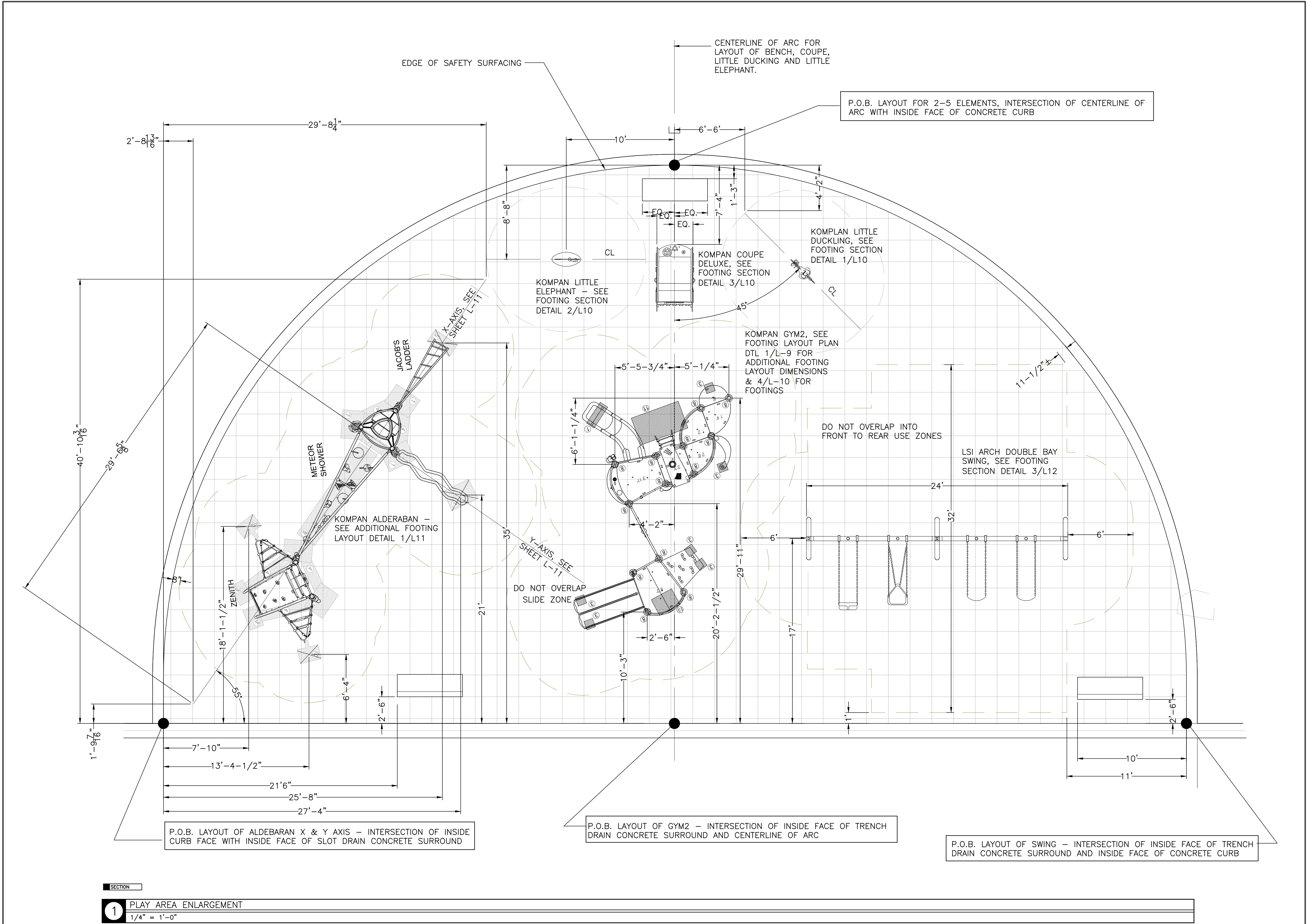
TITLE:

**PAVING & CURBING  
DETAILS**

Scale AS NOTED Date JUNE 3, 2014  
Drawn By CCC  
Checked By DRB  
Approved ByCCC  
Project No. 1313.00

DWG No. **L-6**





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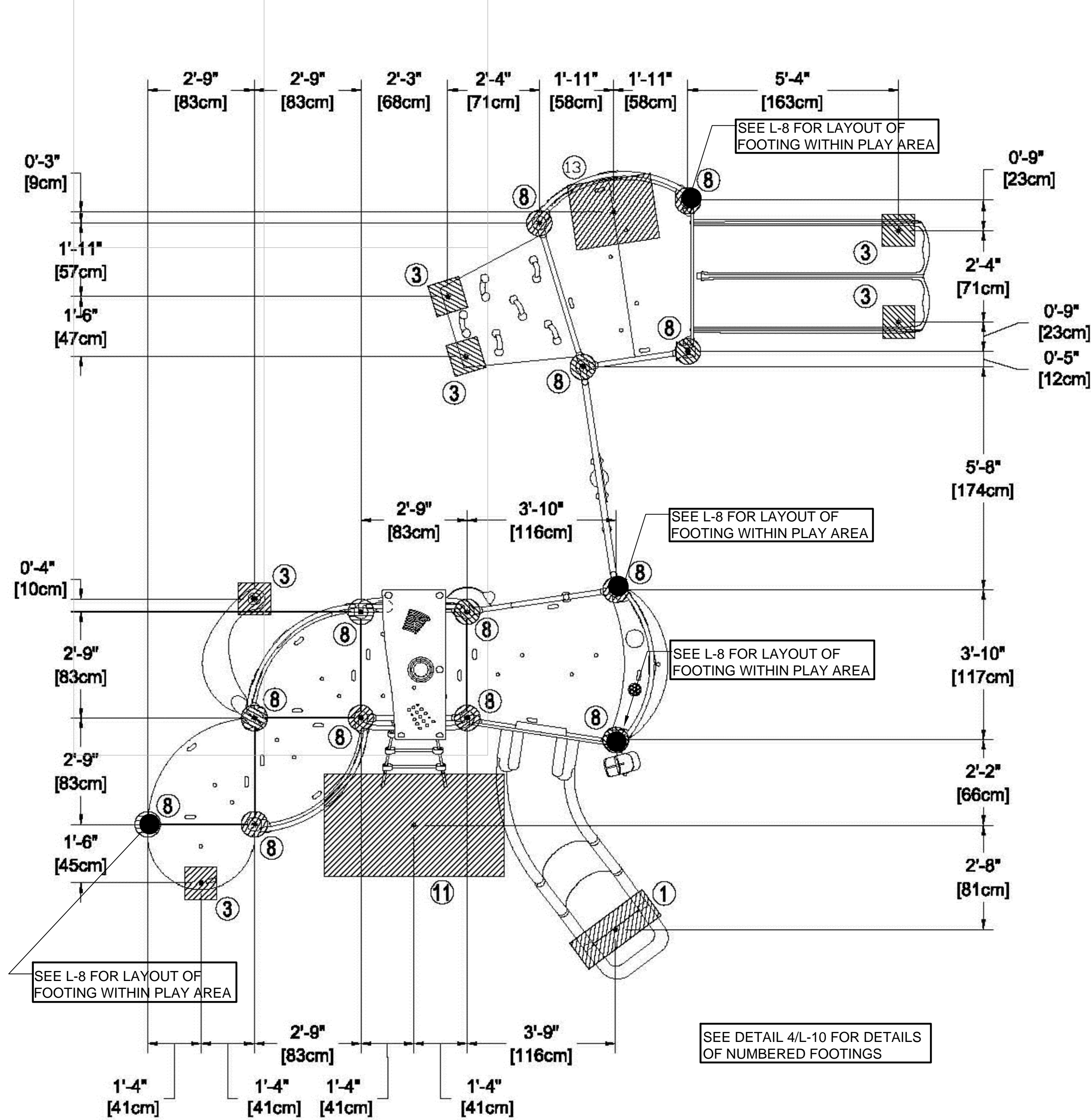
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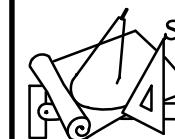
No.	Description	Date
REVISIONS		
Project:		
CITY OF WALTHAM POND END TOT LOT 8 WINTER STREET WALTHAM, MA 02451		
Prepared For:		
CITY OF WALTHAM DEPARTMENT OF RECREATION 510 MOODY STREET WALTHAM, MA 02453		
TITLE:		
PLAY AREA ENLARGEMENT		
Scale	AS NOTED	Date JUNE 3, 2014
Drawn By	CCC	
Checked By	DRB	
Approved By	CCC	
Project No.	1313.00	
DWG No.	L-8	

ELE400231 - GYM 2  
IN-GROUND FOOTINGS DETAIL



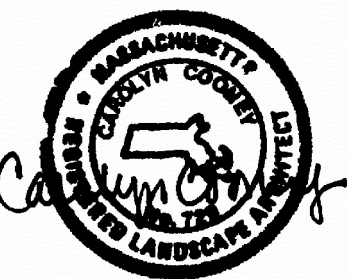
SECTION	
1	KOMPAN "GYM 2" FOOTING LAYOUT PLAN N.T.S.

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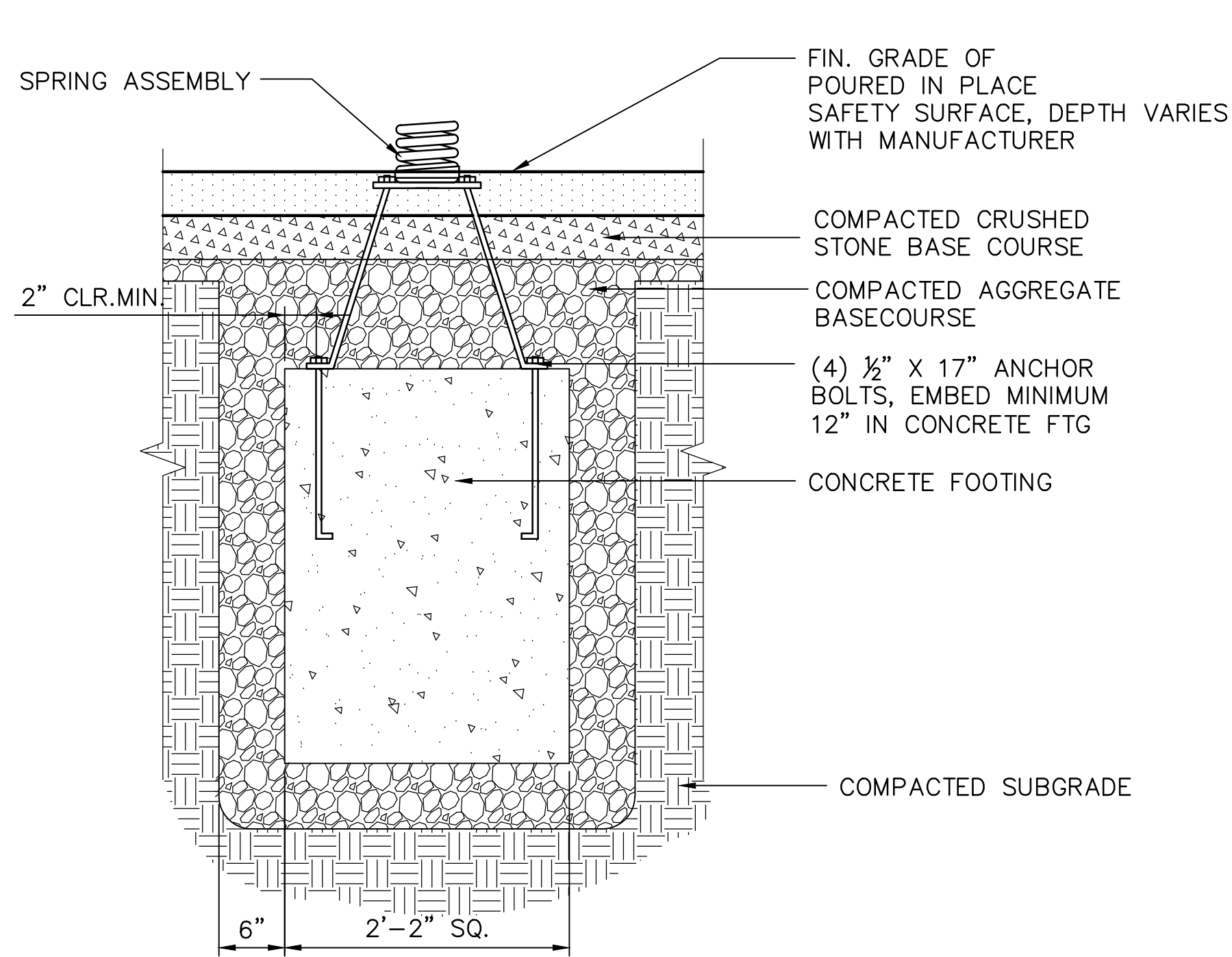
Project:  
**CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
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Prepared For:  
**CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453**

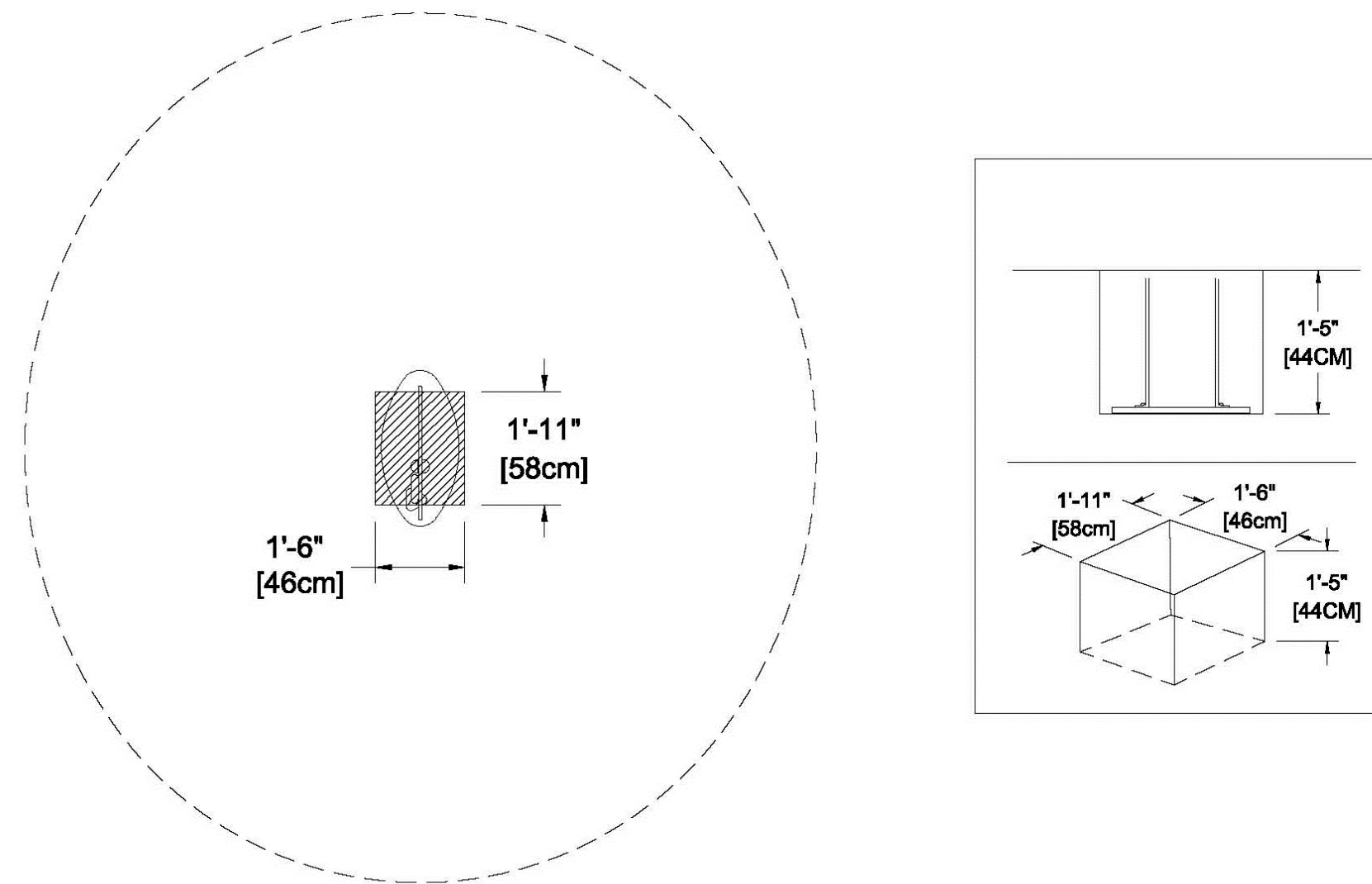
TITLE:  
**PLAY EQUIPMENT  
DETAILS**

Scale AS NOTED Date JUNE 3, 2014  
Drawn By CCC  
Checked By DRB  
Approved ByCCC  
Project No. 1313.00

DWG No. **L-9**



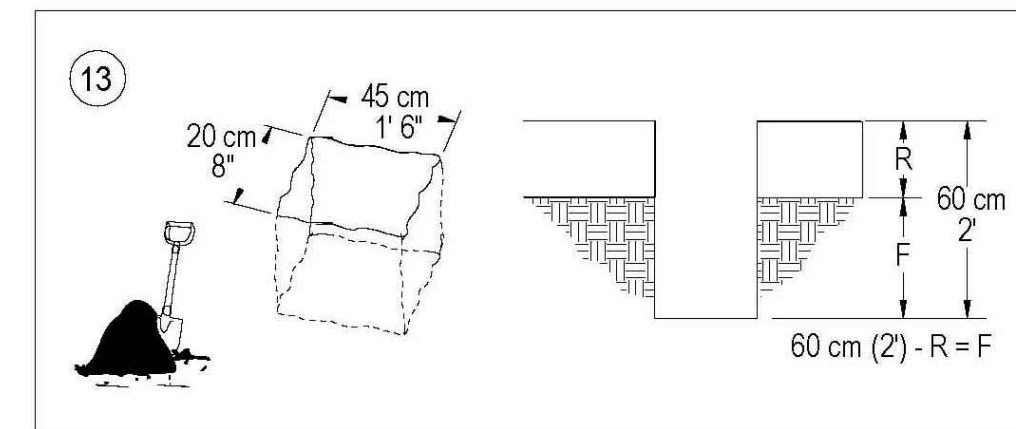
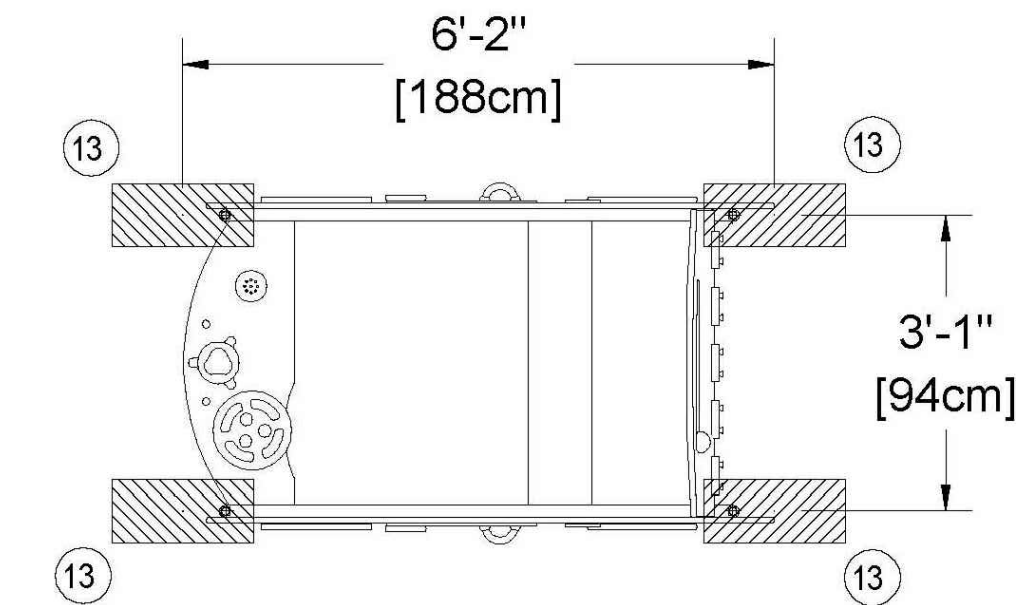
**M189P - LITTLE ELEPHANT**  
IN-GROUND FOOTINGS DETAIL



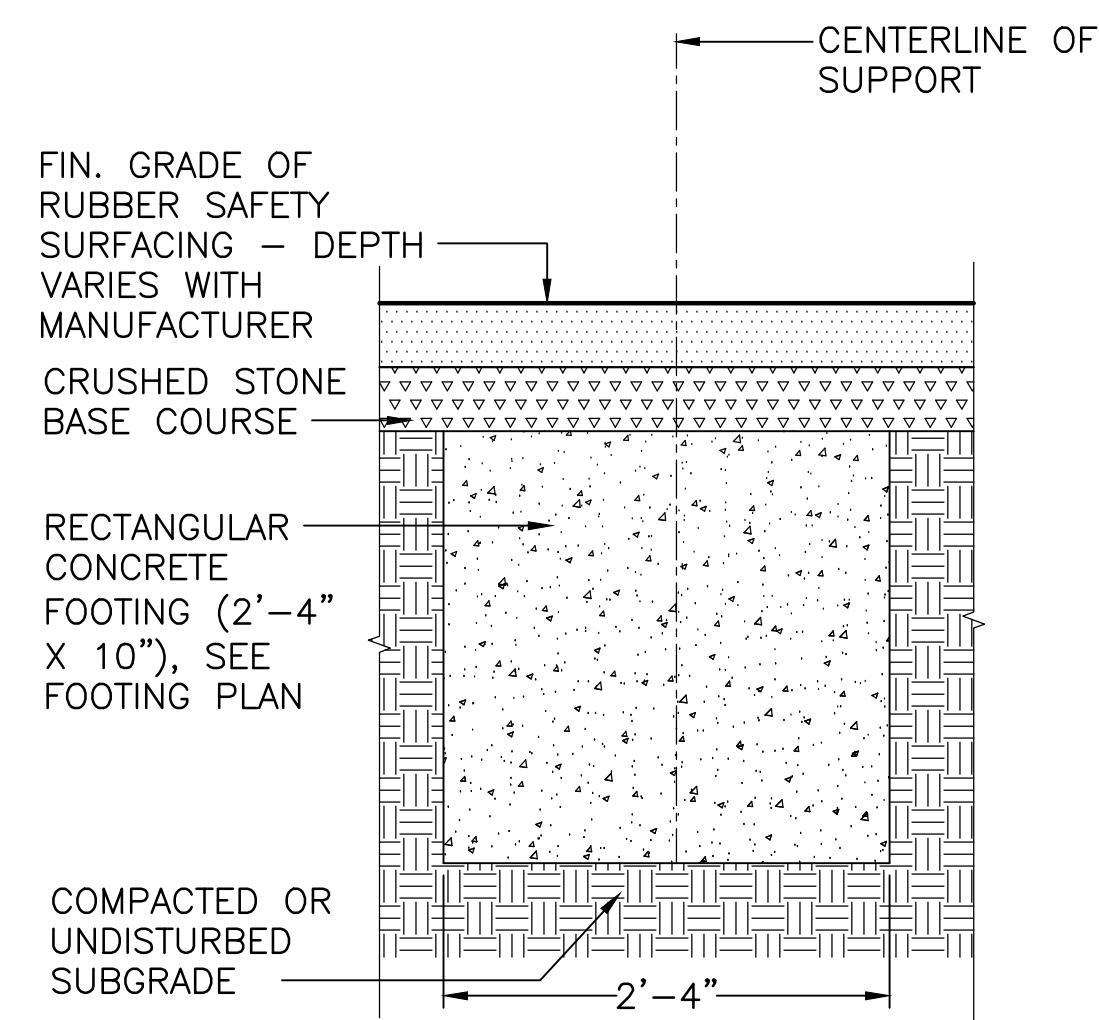
**SECTION**  
**1** KOMPAN "LITTLE DUCKLING"  
1" = 1'-0"

**SECTION**  
**2** KOMPAN "LITTLE ELEPHANT"  
N.T.S.

**MSC5414P - COUPE DELUXE**  
IN-GROUND FOOTINGS DETAIL

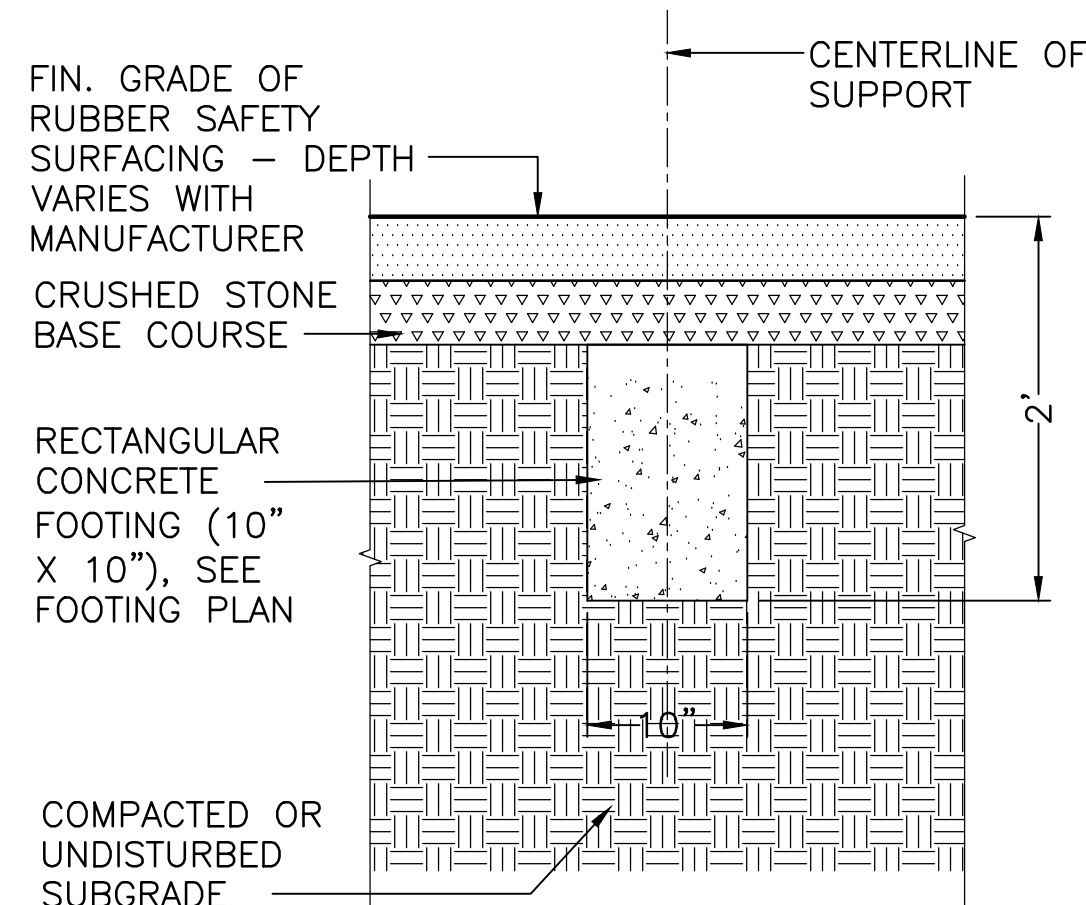


**SECTION**  
**3** KOMPAN "COUPE DELUXE" LAYOUT PLAN  
N.T.S.



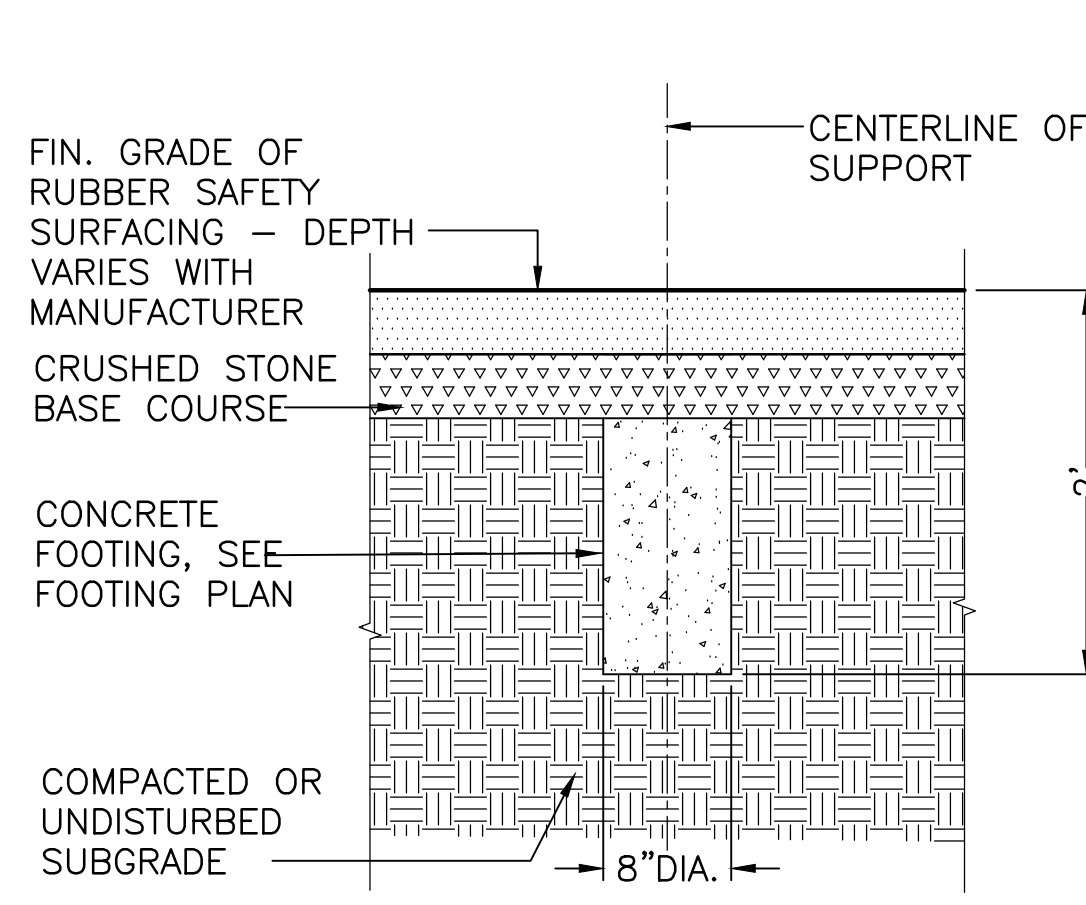
"GYM 2" FOOTING ①

NOTE: ALL FOOTING NUMBERS ON THIS DETAIL REFER TO DETAIL 1/L9 FOR THE "GYM 2".

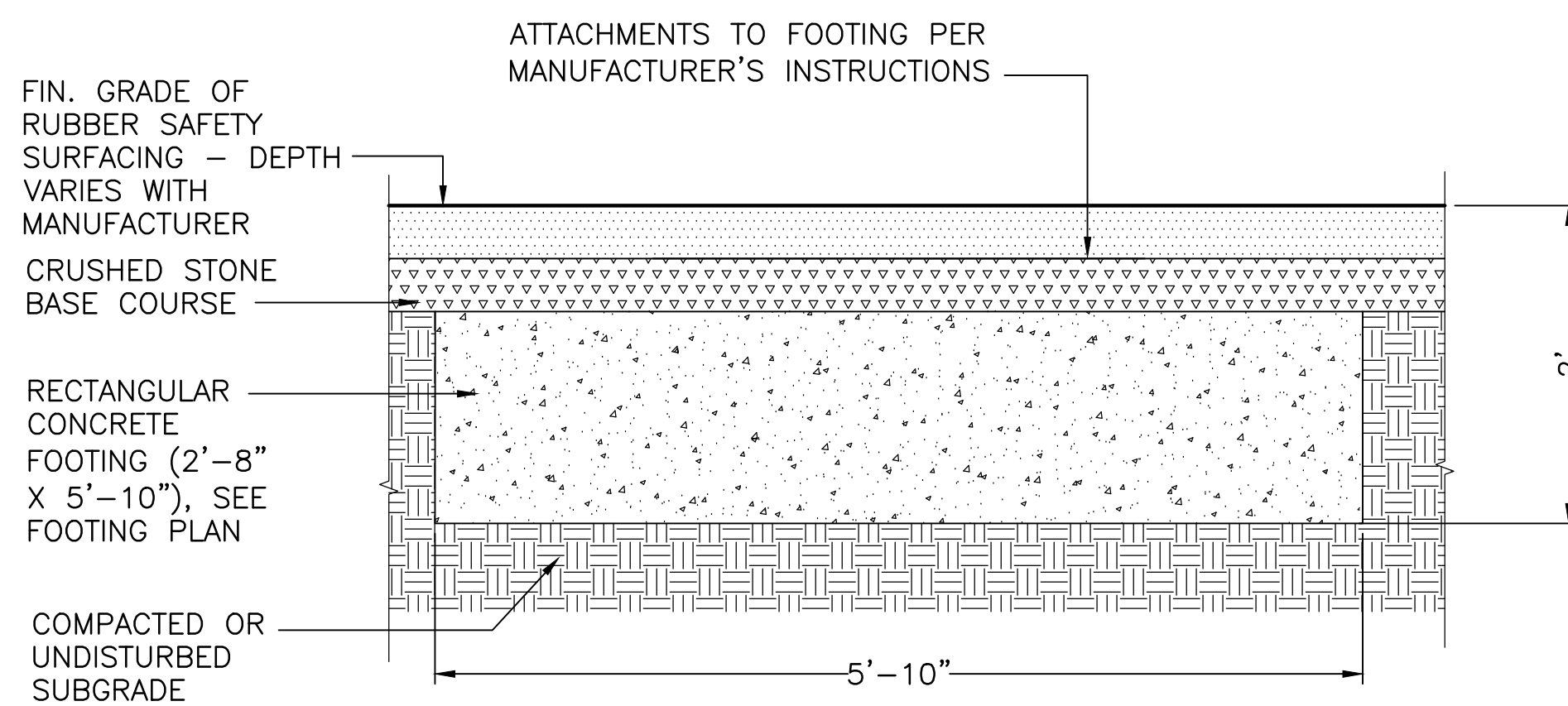


"GYM 2" FOOTING ③

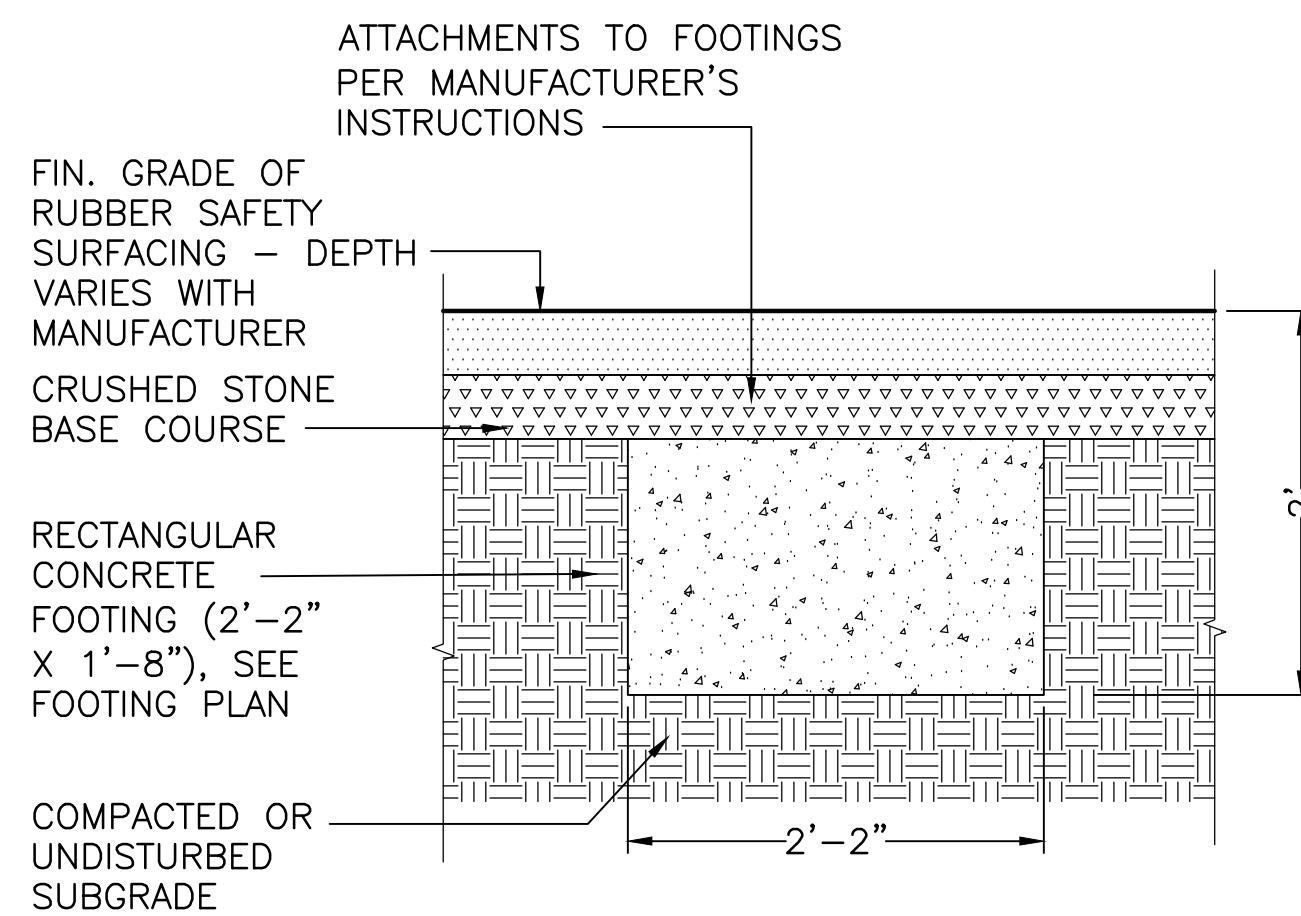
NOTE: PRIOR TO FORMING FOOTINGS, CONFIRM FOOTING DETAILS WITH BOTH PLAYGROUND AND SAFETY SURFACING MANUFACTURER TO ENSURE CORRECT DEPTHS OF FOOTINGS AND BASE COURSE.



"GYM 2" FOOTING ⑧

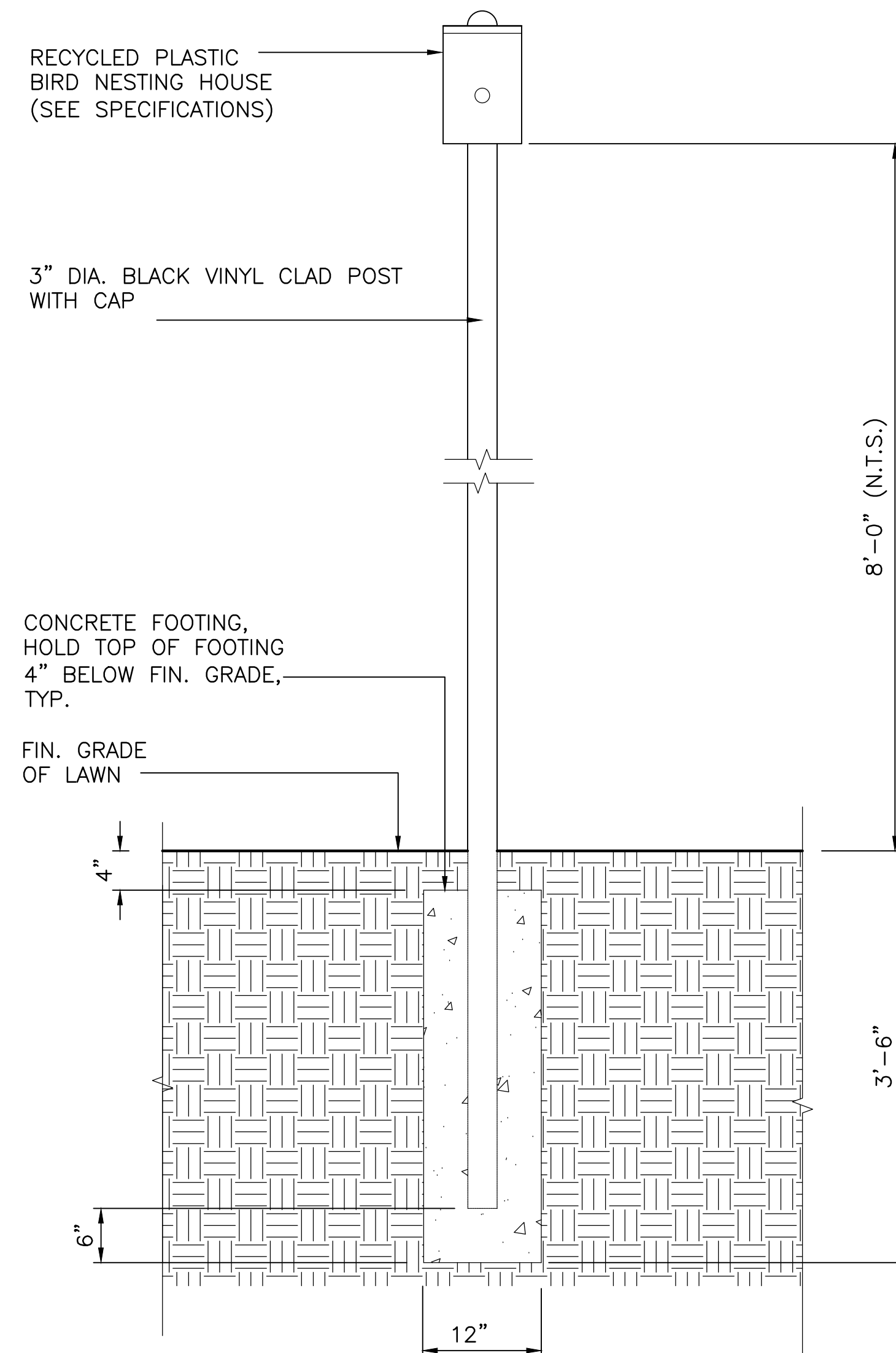


"GYM 2" FOOTING ⑪



"GYM 2" FOOTING ⑬

**SECTION**  
**4** KOMPAN "GYM 2" FOOTINGS  
N.T.S.



**SECTION**  
**5** BIRDHOUSE ON POLE (2 REQUIRED)  
1" = 1'-0"

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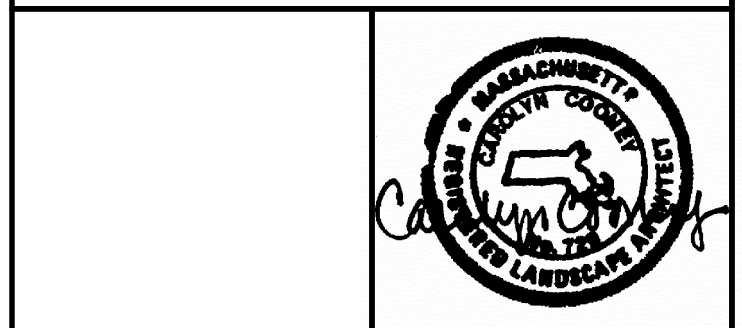
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No.	Description	Date
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REVISIONS



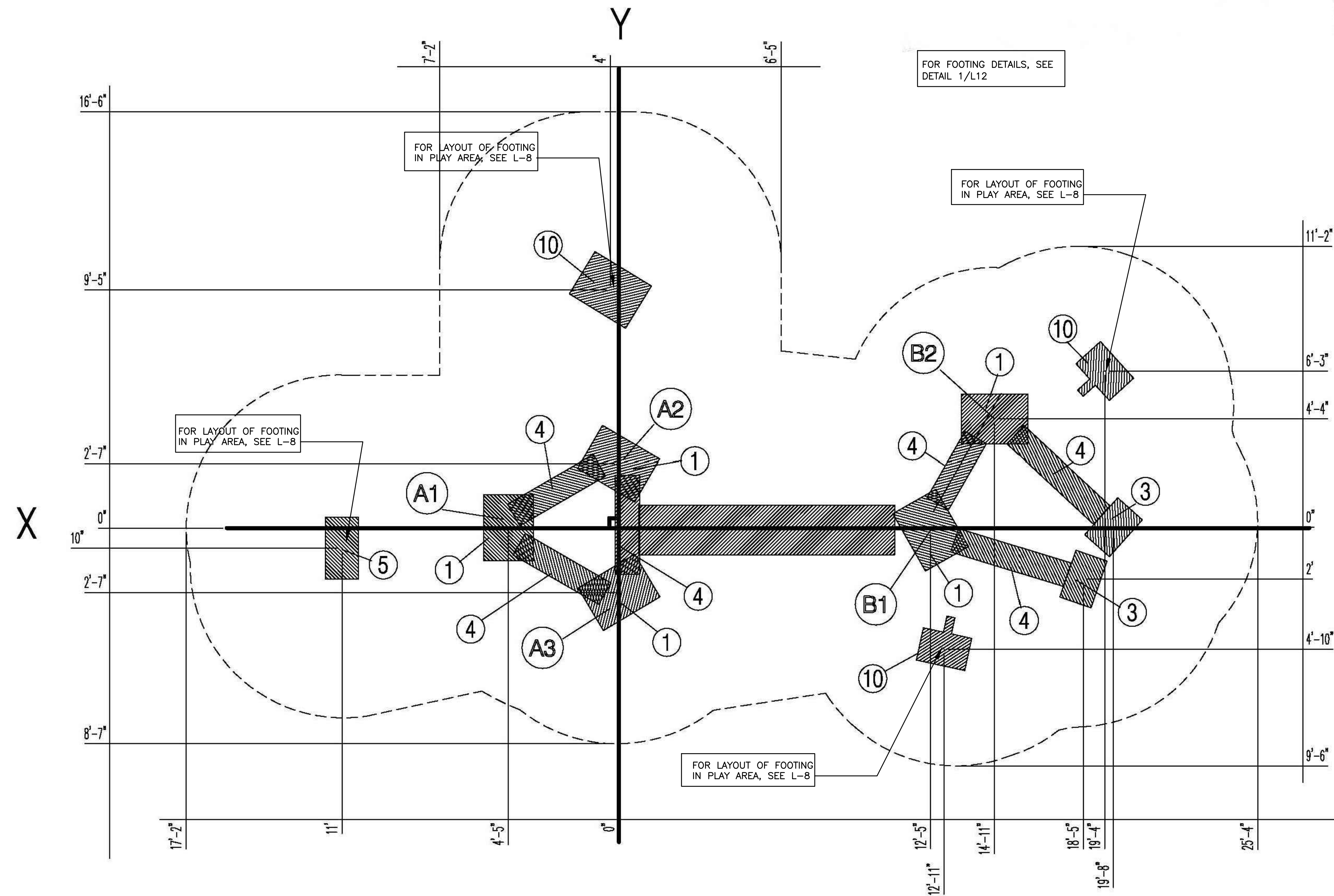
Project:  
**CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
WALTHAM, MA 02451**

Prepared For:  
**CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453**

TITLE:  
**PLAY EQUIPMENTS  
DETAILS**

Scale AS NOTED Date JUNE 3, 2014  
Drawn By CCC  
Checked By DRB  
Approved ByCCC  
Project No. 1313.00

DWG No. **L-10**



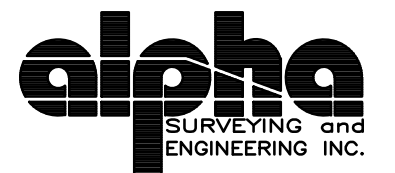
SECTION

1 KOMPAN "ALDEBARAN" FOOTING LAYOUT  
3/8" = 1'-0"

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No.	Description	Date

REVISIONS



Project:

CITY OF WALTHAM  
POND END TOT LOT  
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WALTHAM, MA 02451

Prepared For:

CITY OF WALTHAM  
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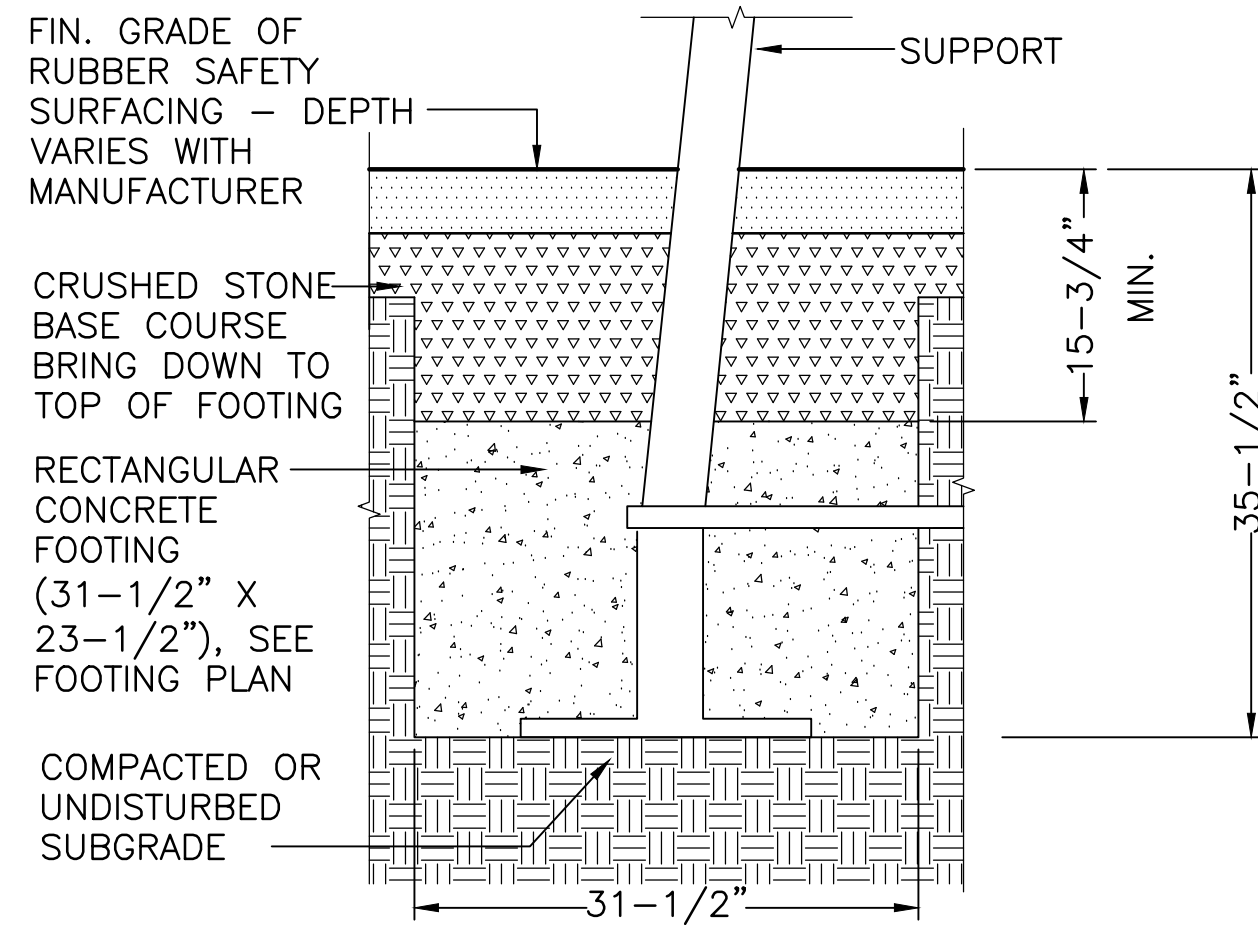
TITLE:

PLAY EQUIPMENT  
DETAILS

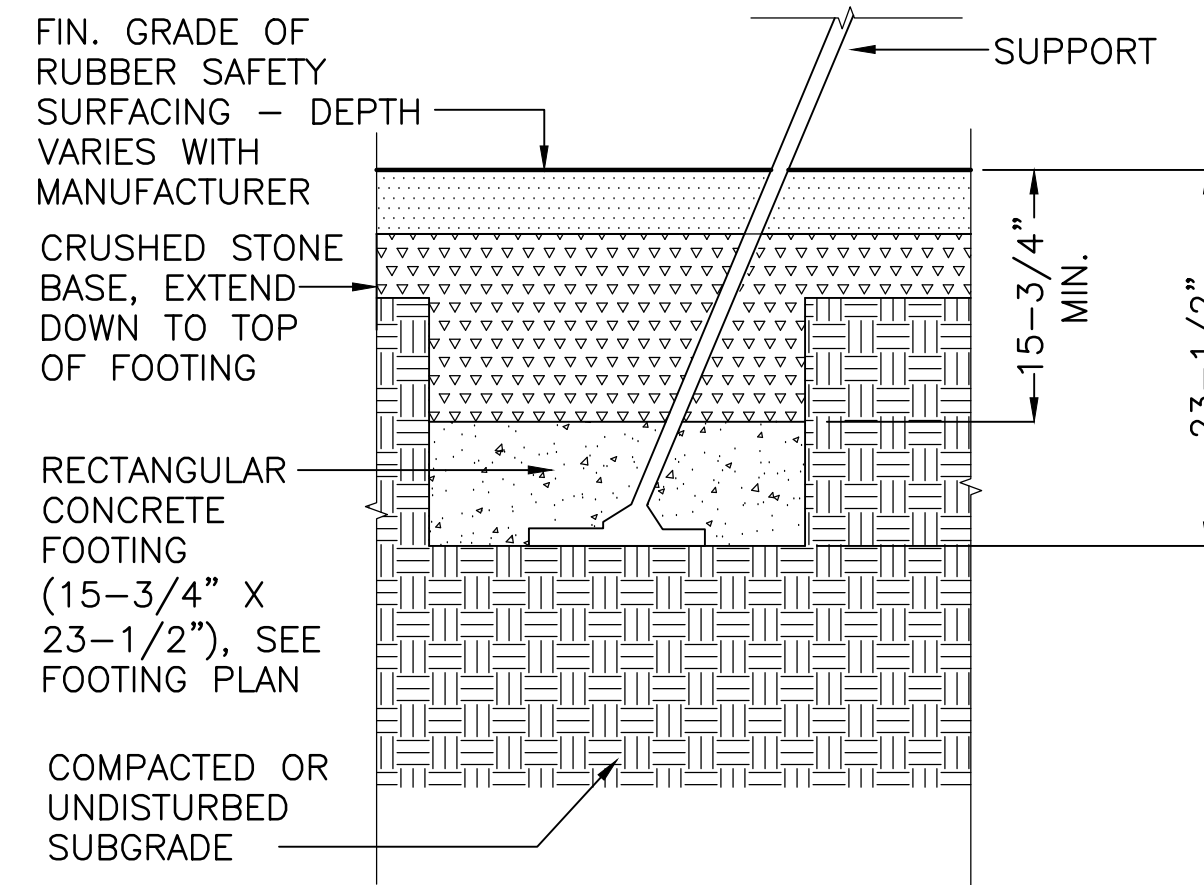
Scale AS NOTED Date JUNE 3, 2014  
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Project No. 1313.00

DWG No.

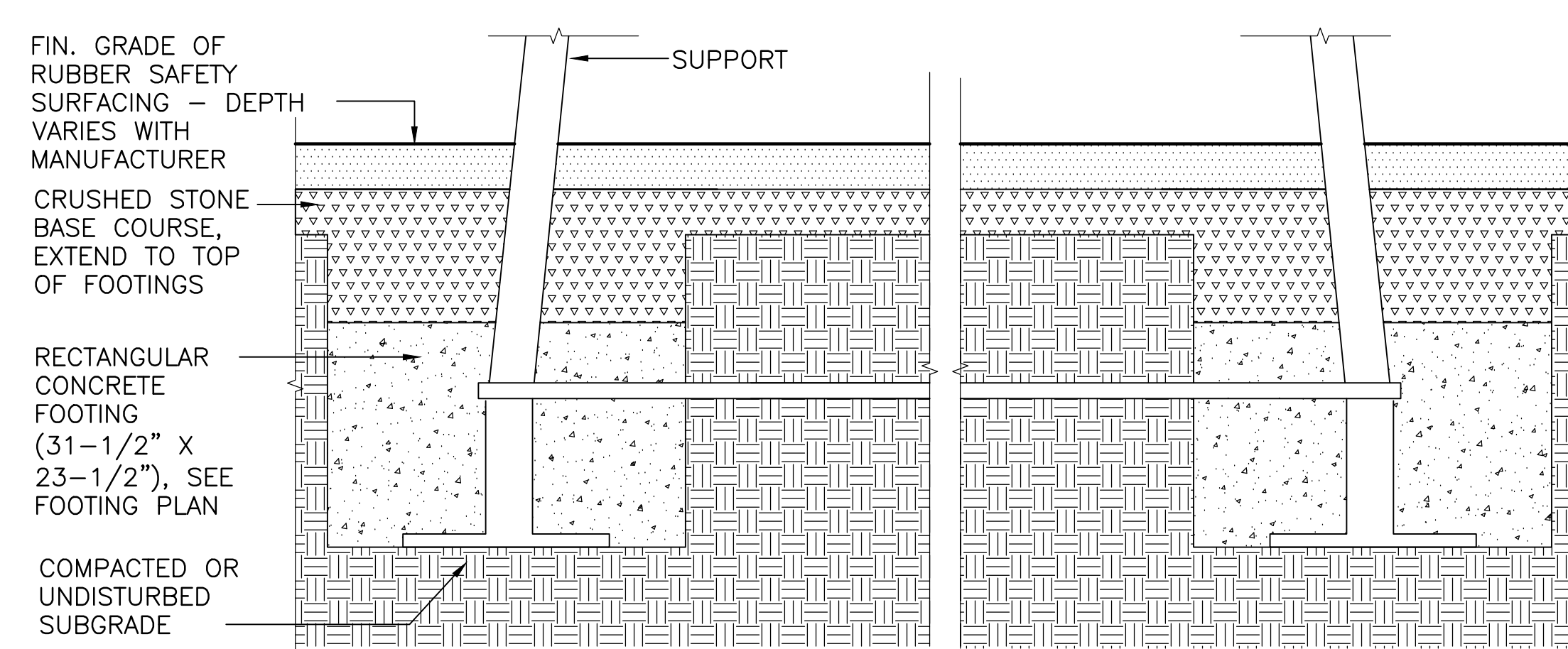
L-11



ALDEBARAN FOOTING ① A1, A2, A3, B1, B2

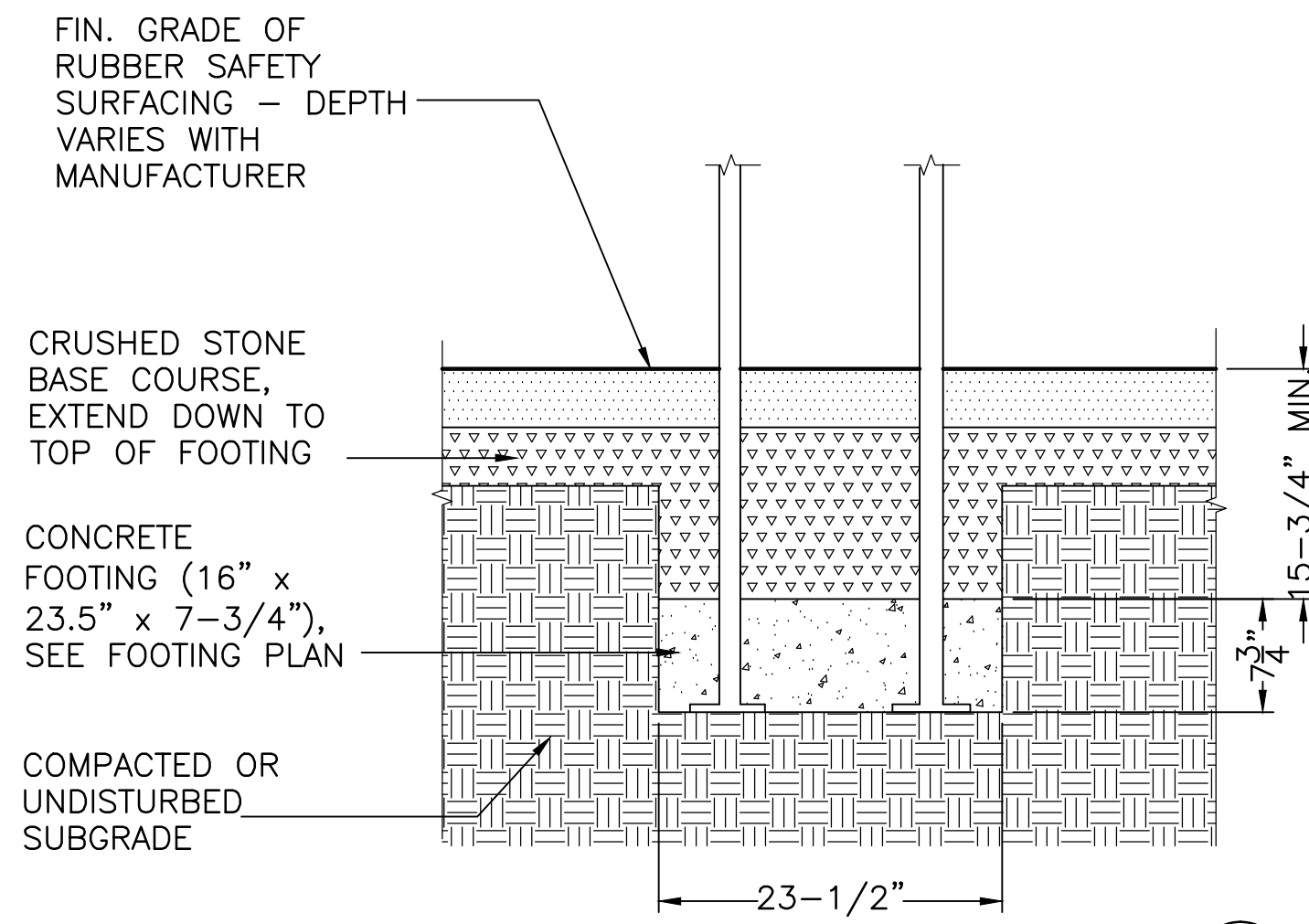


ALDEBARAN FOOTING ③

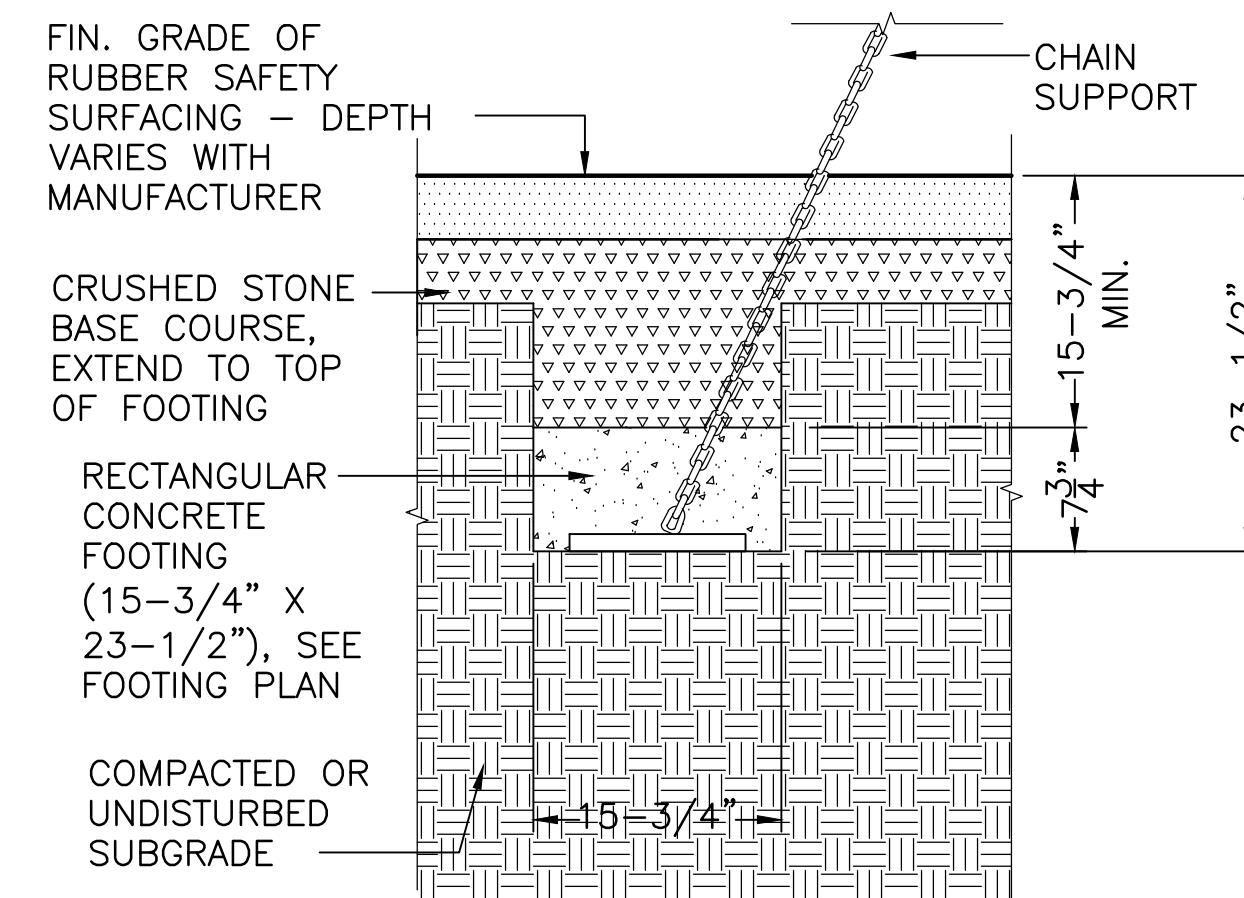


ALDEBARAN FOOTING ④

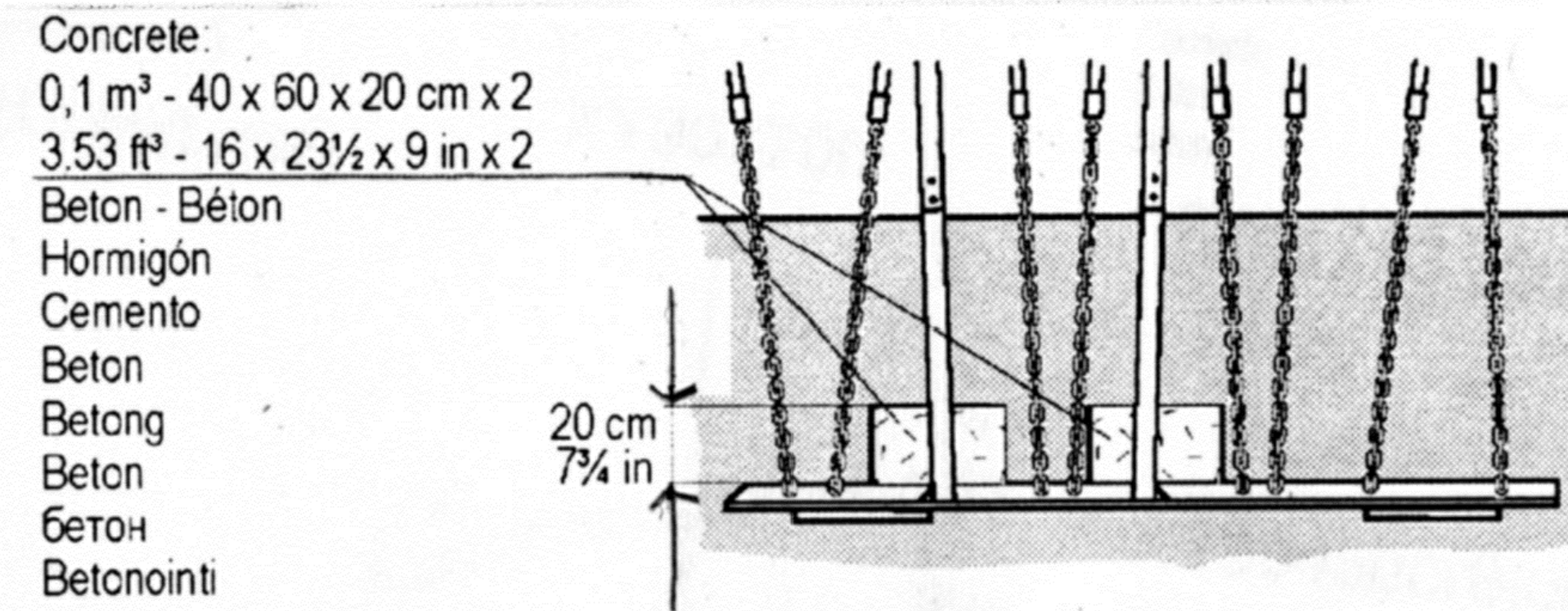
ALDEBARAN FOOTING ④



ALDEBARAN FOOTING ⑤



ALDEBARAN FOOTING ⑩

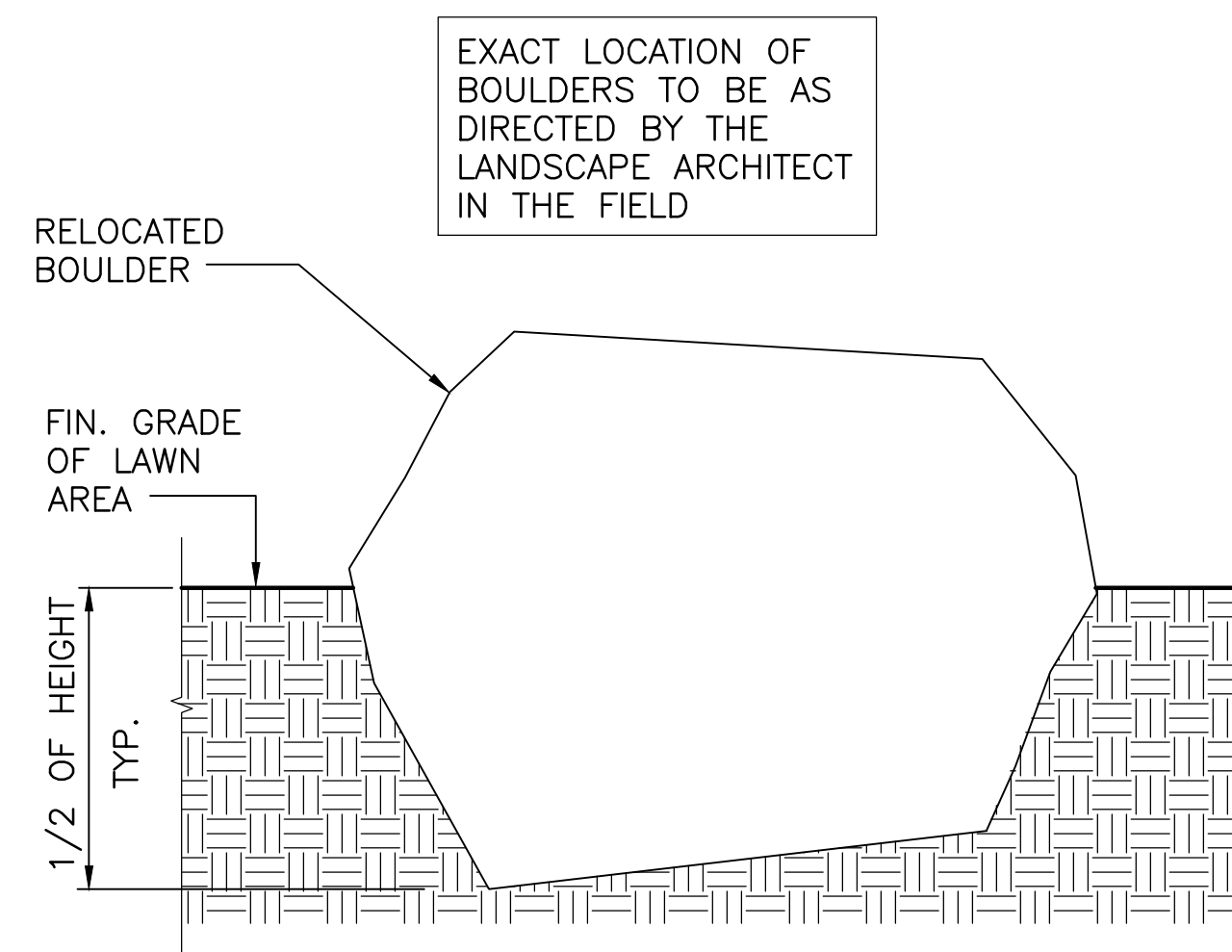


FOOTING AT METEOR SHOWERS

SECTION

1

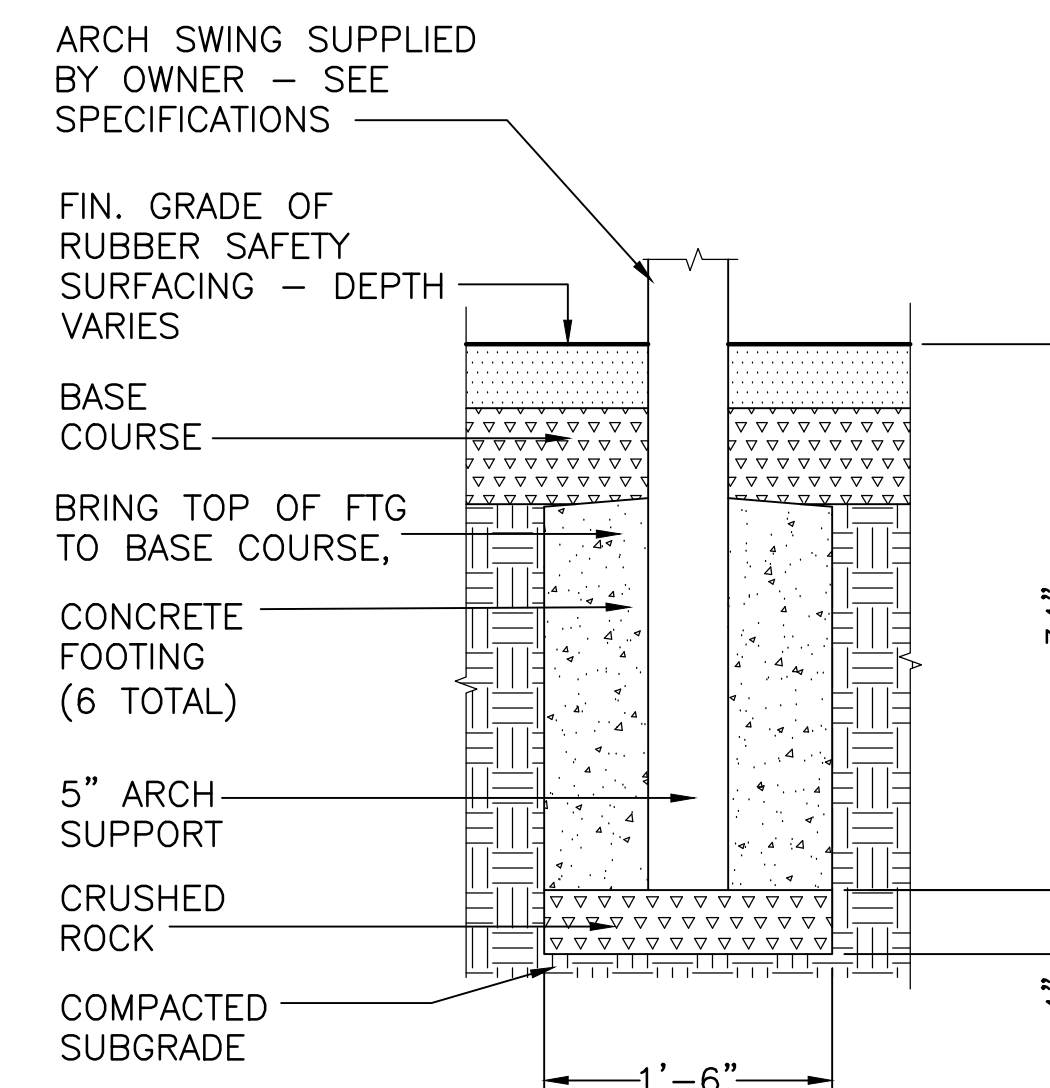
KOMPAN "ALDEBARAN" FOOTINGS  
N.T.S.



SECTION

2

RELOCATED BOULDER  
1" = 1'-0"



SECTION

3

ARCH SWING FOOTING (6 POSTS TOTAL)  
1" = 1'-0"

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Project:

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Prepared For:

CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453

TITLE:

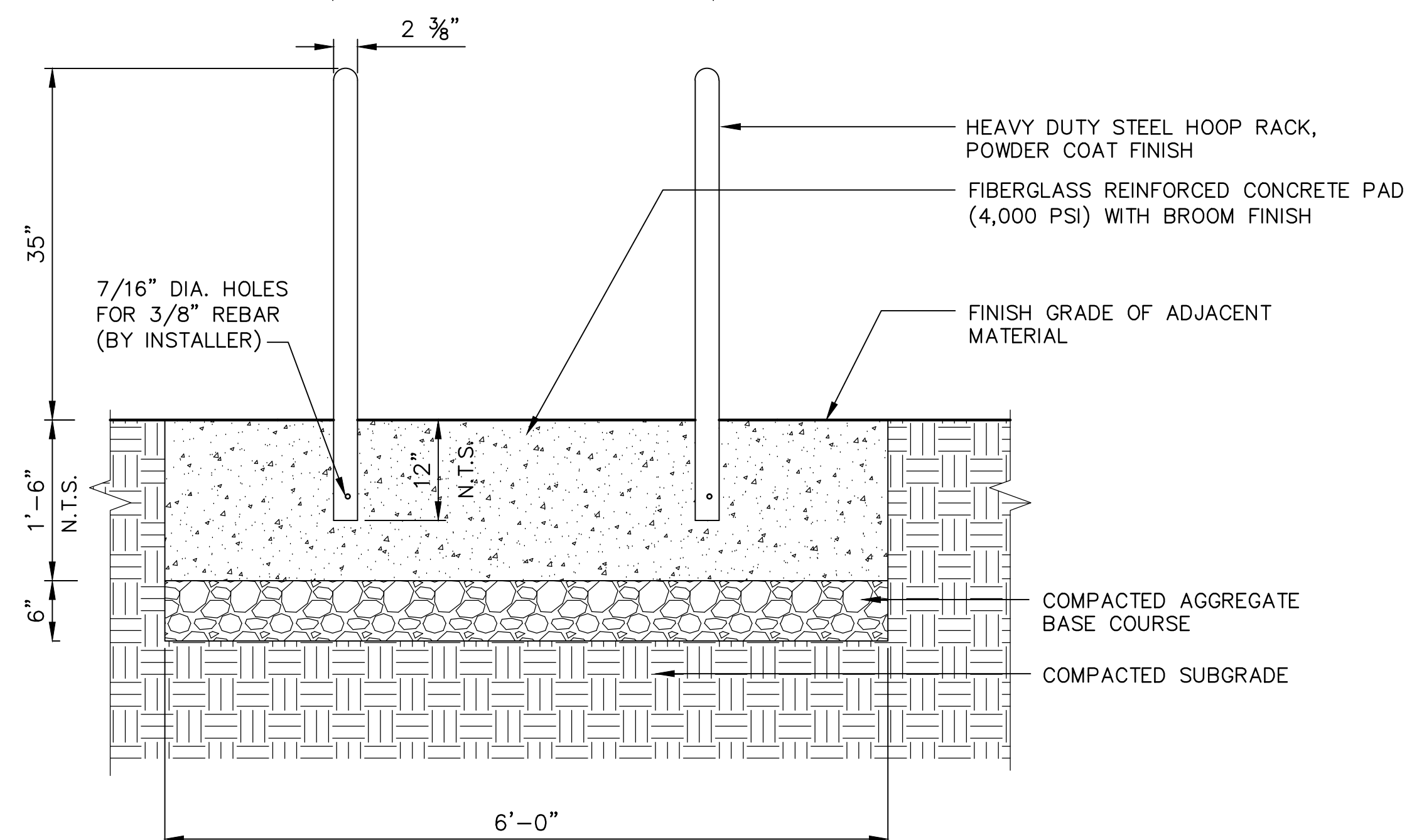
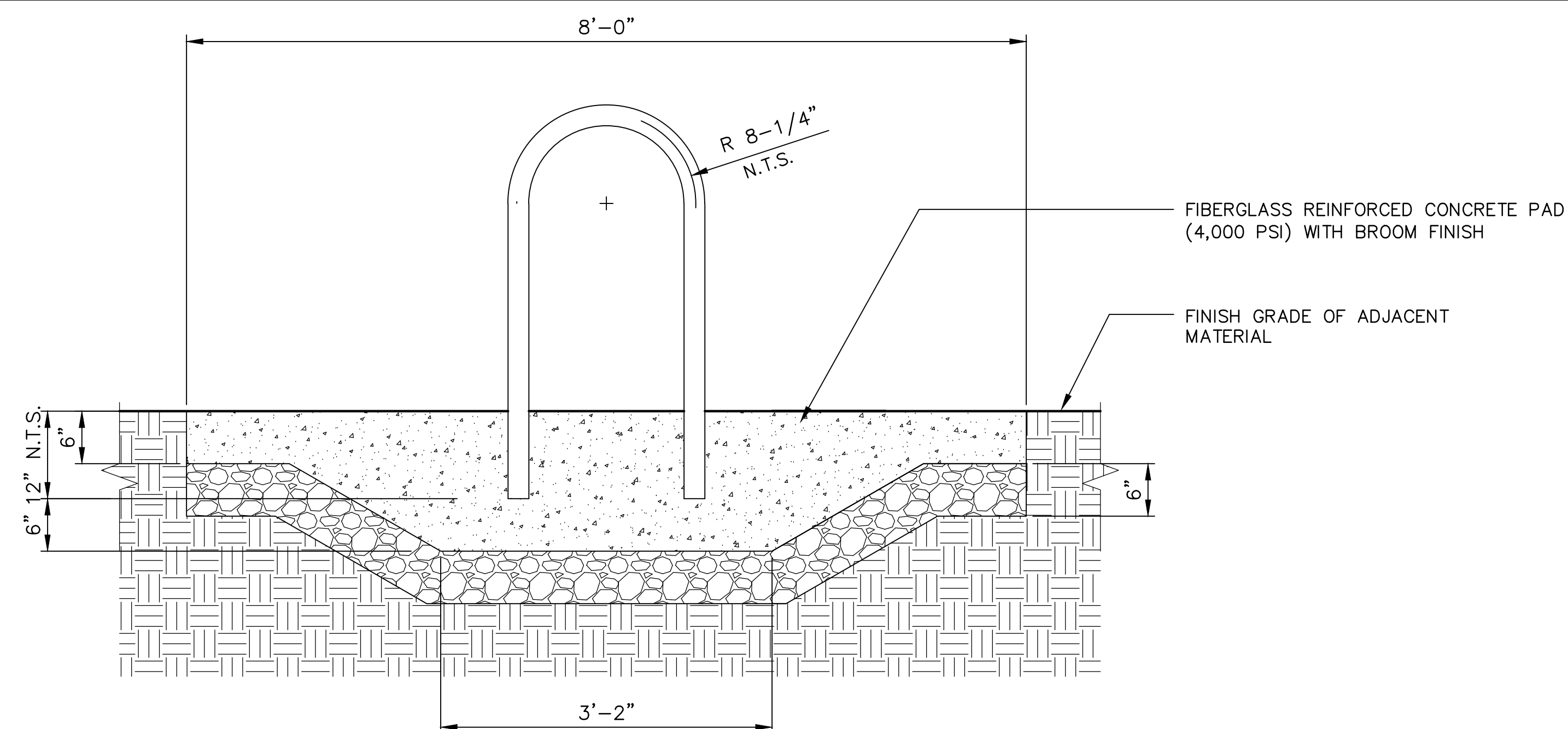
PLAY EQUIPMENT  
DETAILS

Scale AS NOTED Date JUNE 3, 2014  
Drawn By CCC  
Checked By DRB  
Approved ByCCC  
Project No. 1313.00

DWG No.

L-12

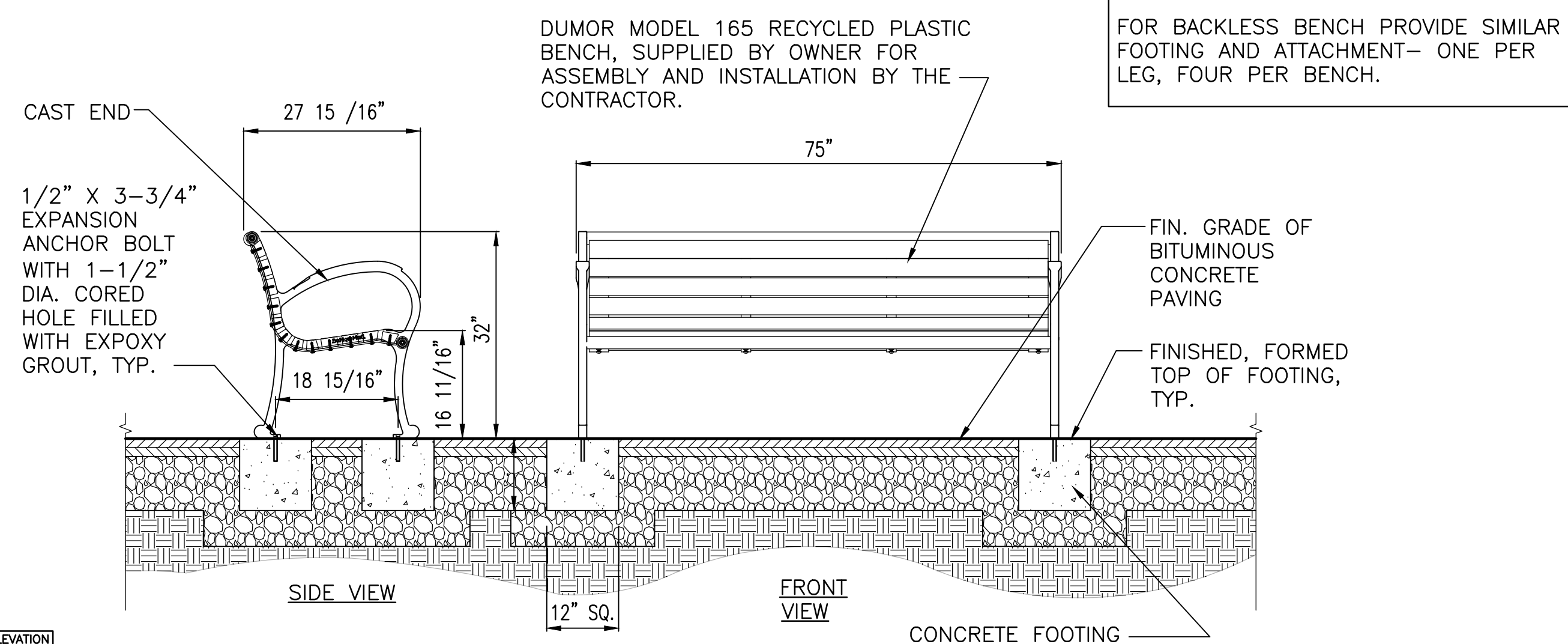




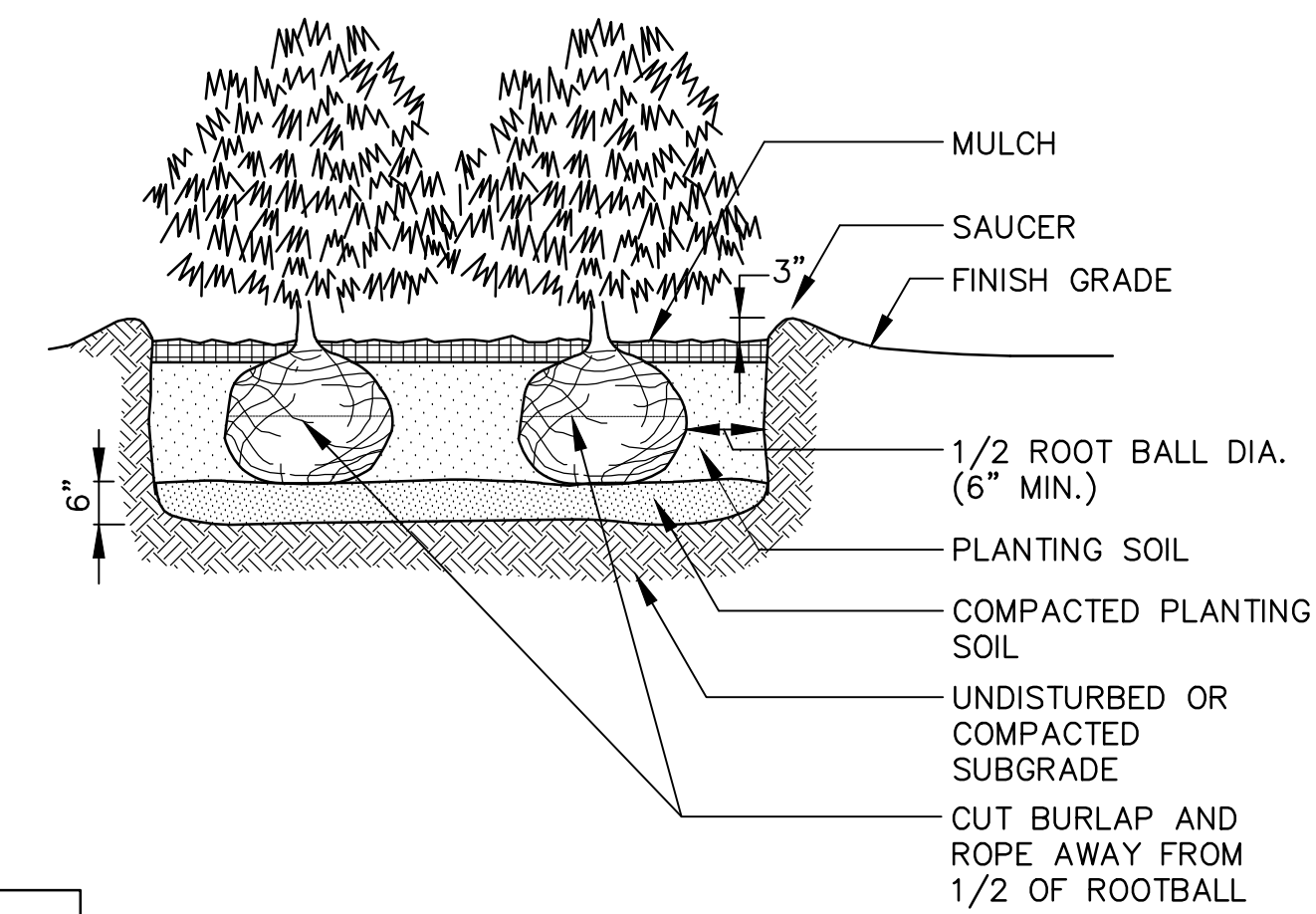
SECTION

1 BIKE LOOP INSTALLATION DETAIL

SCALE: 1" = 1'-0"



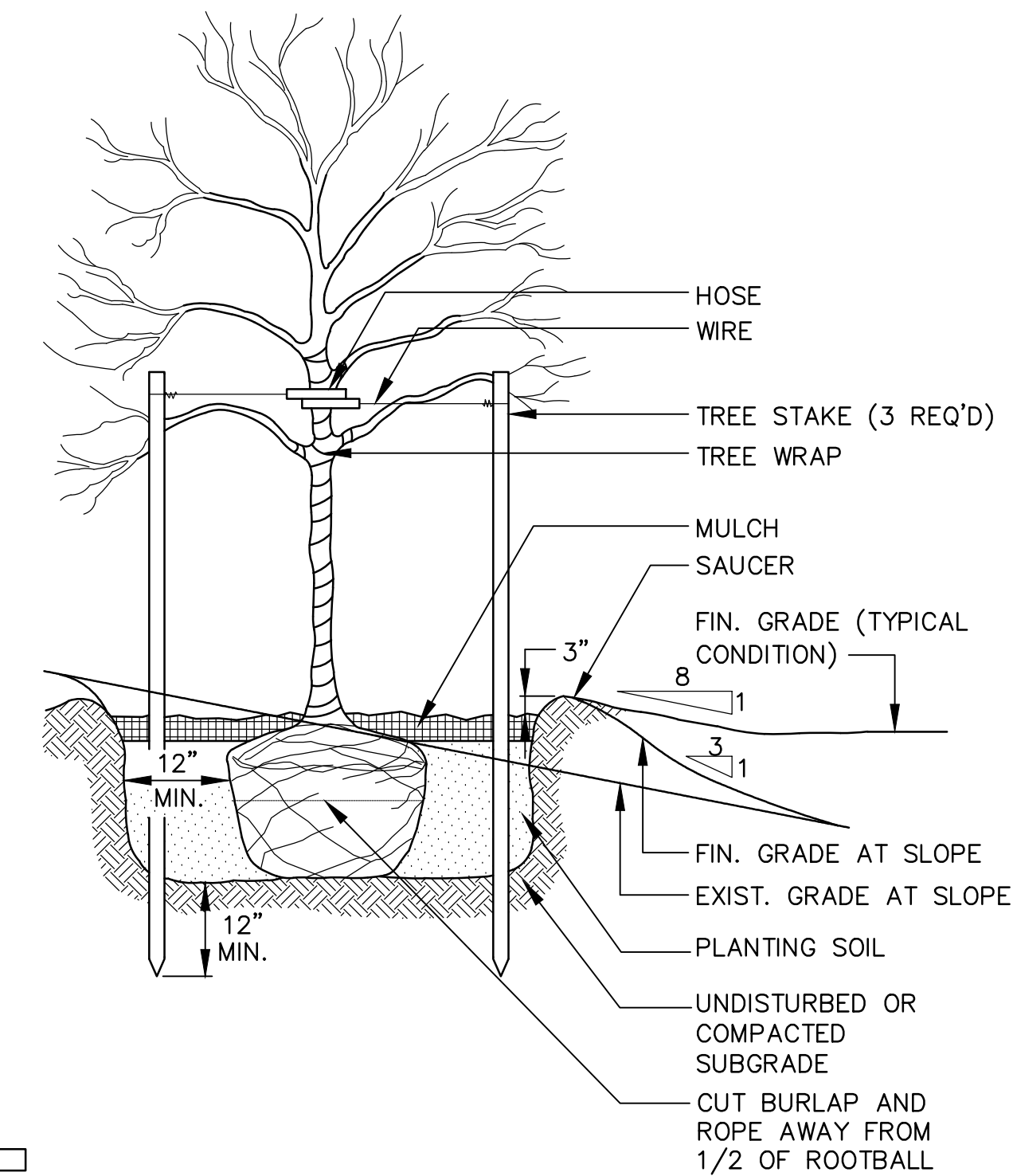
3	BENCH INSTALLATION – (3) WITH BACKREST; (1) BACKLESS
	N.T.S.



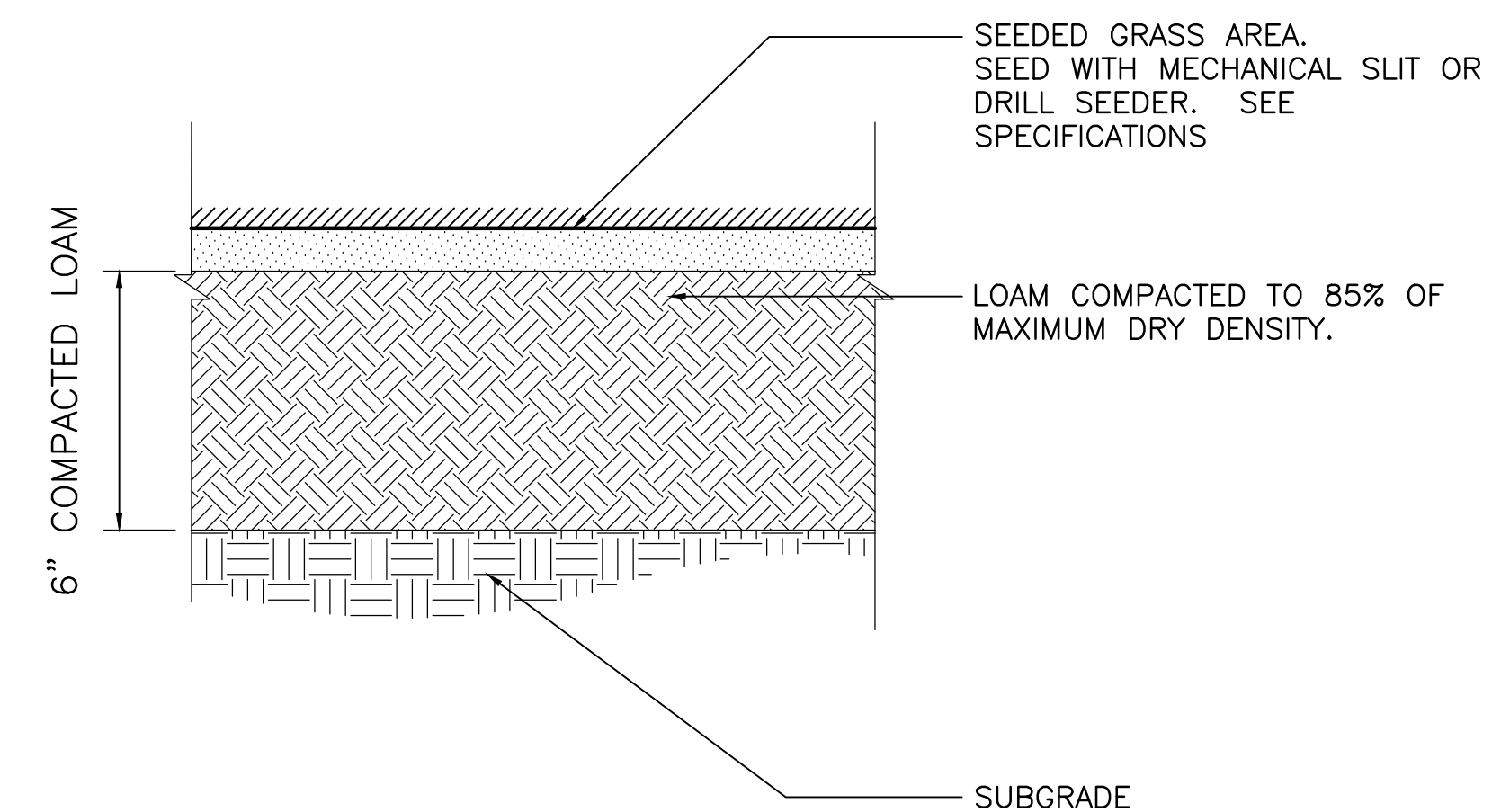
## 2 SHRUB INSTALLATION DETAIL

GENERAL NOTES:

1. CROWN OF ROOT BALL SHALL BE AT GRADE OR HIGHER.



## 4 DECIDUOUS TREE INSTALLATION DETAIL

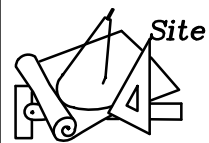


## 5 LOAM & SEED DETAIL

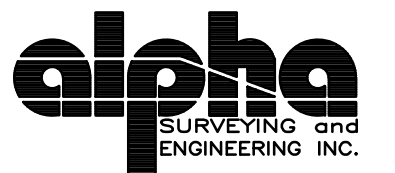
**Carolyn Cooney &  
Associates**

Landscape Architecture / Planning

13 Elm Street, Milford, MA 01757  
Telephone 508 478 8426, Facsimile 508 478 8607



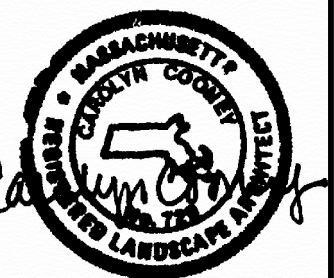
**Engineering Consultants, Inc.**  
55 Grape Shot Road  
Sharon, Massachusetts 02067  
TEL: (781) 784-0326  
FAX: (781) 784-0492  
**CONSULTING CIVIL ENGINEERS**



**ALPHA SURVEYING AND  
ENGINEERING INC.**

695 WAREHAM STREET  
MIDDLEBOROUGH, MASSACHUSETTS 02346  
(508) 295-5505


## REVISIONS



Project:

CITY OF WALTHAM  
POND END TOT LOT  
8 WINTER STREET  
WALTHAM, MA 02451

Prepared For:

CITY OF WALTHAM  
DEPARTMENT OF RECREATION  
510 MOODY STREET  
WALTHAM, MA 02453

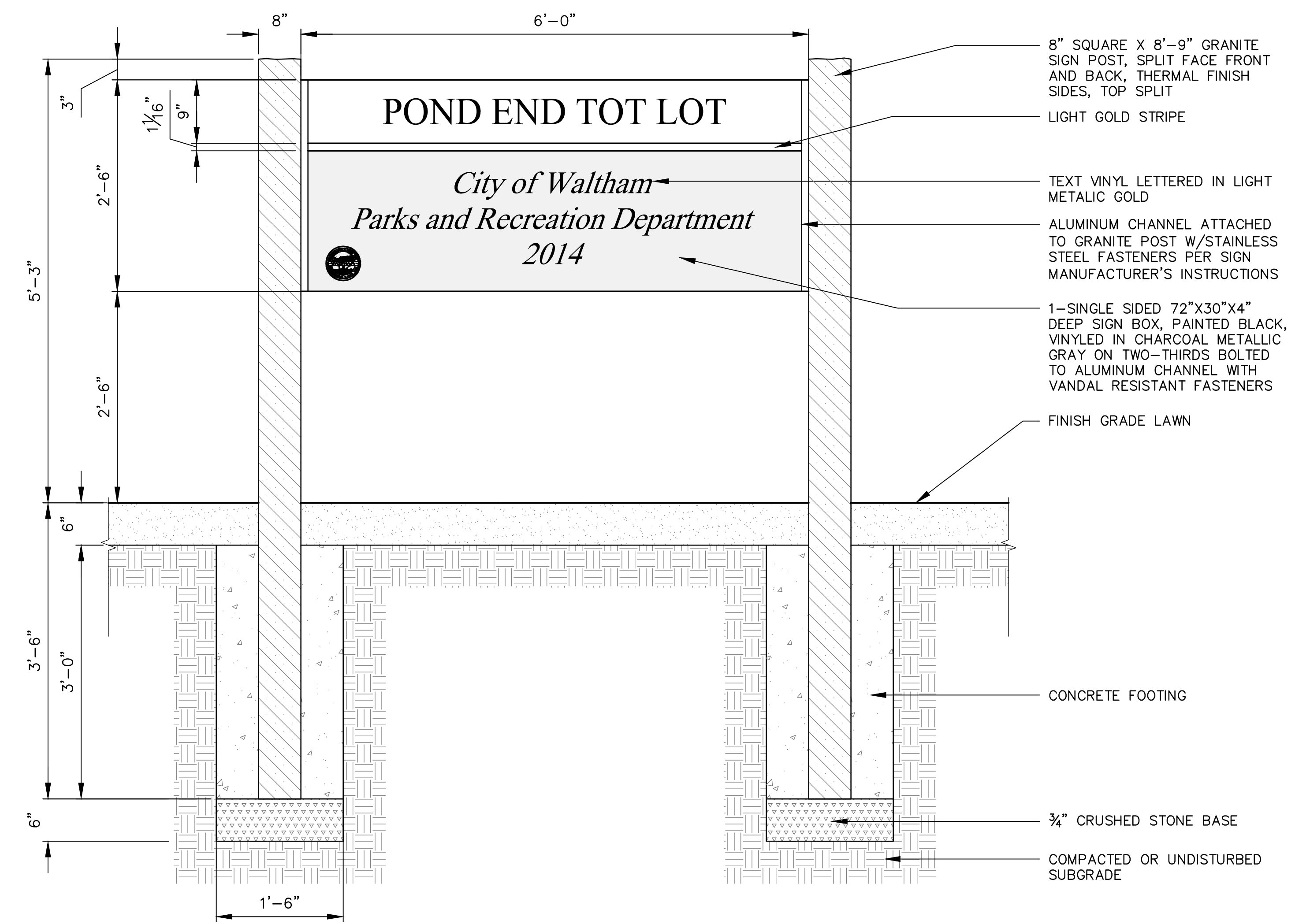
TITLE:

## SITE FURNITURE/ PLANTING DETAILS

Scale AS NOTED Date JUNE 3, 2014  
 Drawn By CCC  
 Checked By DRB  
 Approved By CCC  
 Project No. 1313.00

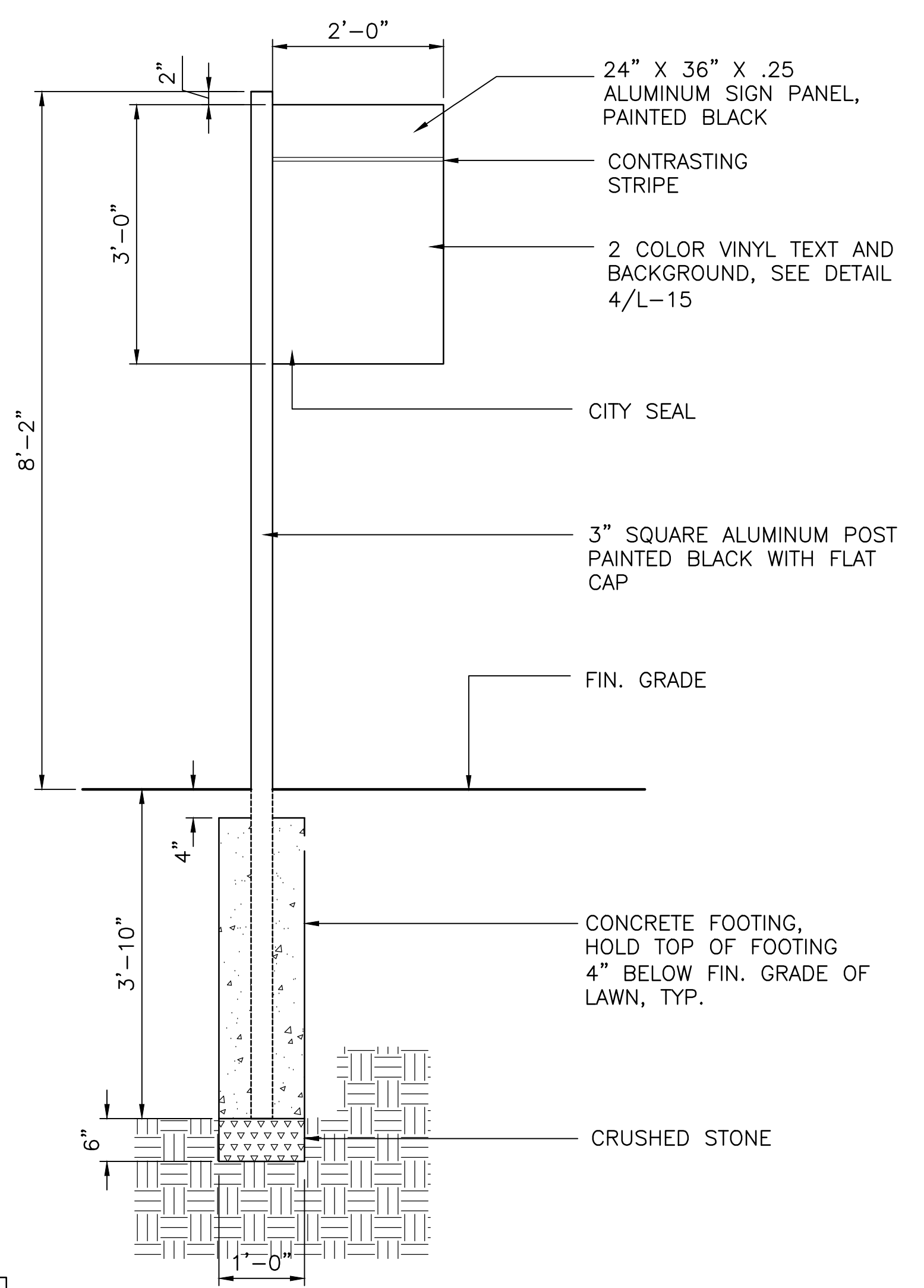
DWG No.

**L-14**



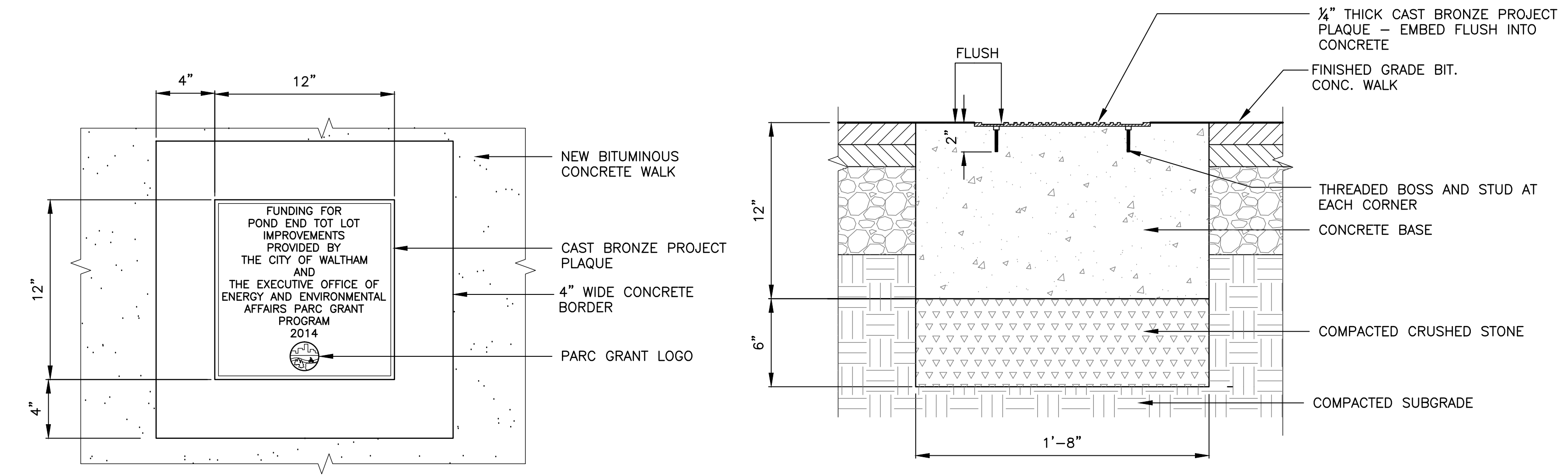
FRONT ELEVATION

1	PARK SIGN - (1 REQUIRED TOTAL)
1" = 1'-0"	



SECTION

2	WELCOME SIGN
3/4" = 1'-0"	



SECTION

3	BRONZE PLAQUE DETAIL
N.T.S.	



SECTION

4	WELCOME SIGN TEXT
N.T.S.	

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No.	Description	Date

Project:

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POND END TOT LOT  
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WALTHAM, MA 02451

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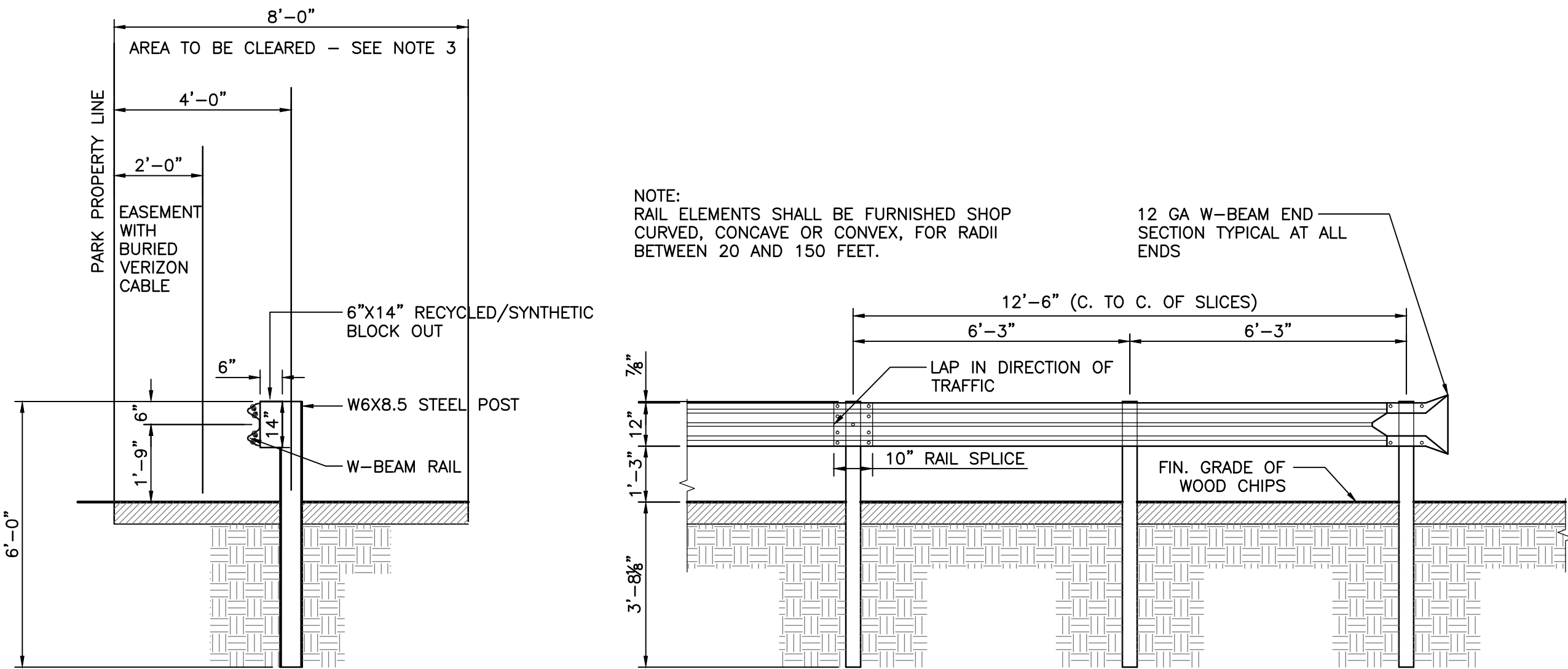
SIGNAGE  
DETAILS

Scale AS NOTED Date JUNE 3, 2014  
Drawn By CCC  
Checked By DRB  
Approved By CCC  
Project No. 1313.00

DWG No. L-15



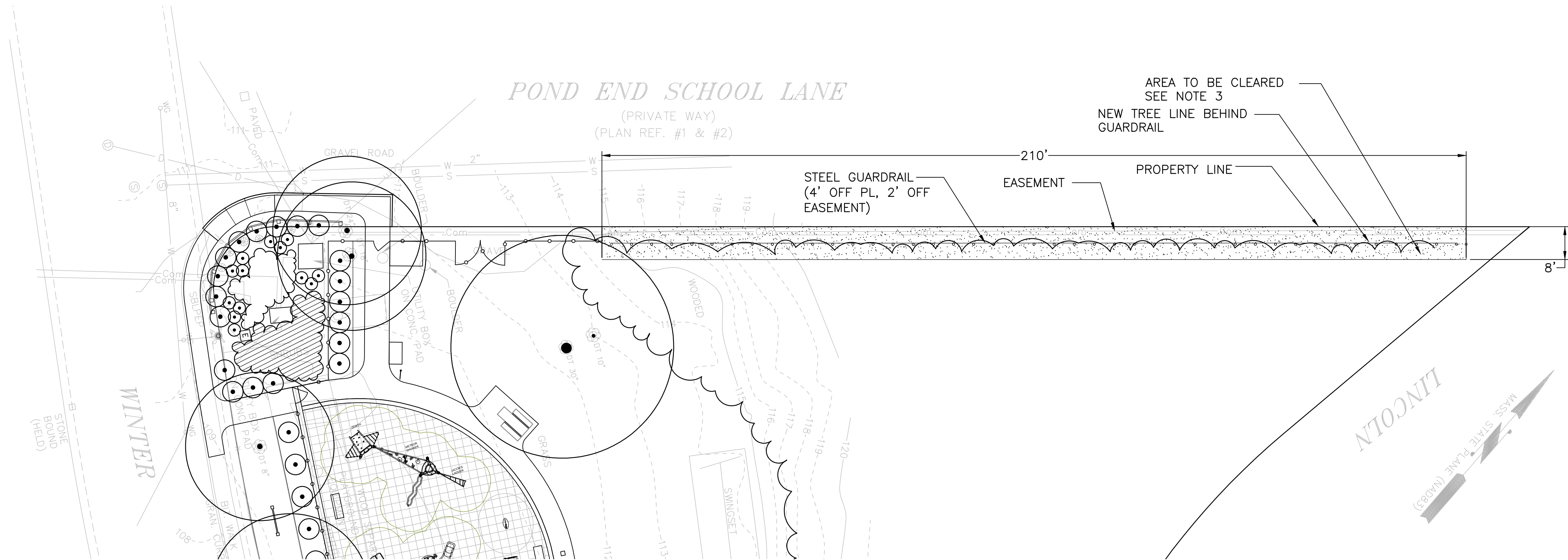
**L-16**



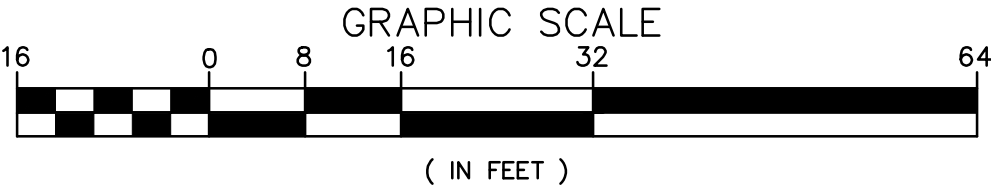
ALTERNATE NO. 1 NOTES:

- FOR LOCATION OF UTILITY EASEMENT, SEE SHEET 1 OF 1, PLAN NO. 588 OF 1986 EASEMENT PLAN. THE CONTRACTOR SHALL INCLUDE IN THE ALTERNATE NO 1 BID PRICE THE COST OF A REGISTERED SURVEYOR TO STAKE THE PROPERTY LINE AND EASEMENT LINE ALONG POND END SCHOOL LANE.
- AT LEAST ONE WEEK PRIOR TO DEMOLITION OR EXCAVATION WITHIN THE UTILITY EASEMENT, NOTIFY ELLEN JOY, VERIZON ENGINEERING DIVISION (781-935-3156, ellen.m.joy@verizon.com). THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ALL ABOVE GROUND AND BELOW GROUND UTILITIES WITHIN THE EASEMENT, INCLUDING BUT NOT LIMITED TO HAND EXCAVATION WHERE NECESSARY.  
  
CLEAR AND GRUB AND REMOVE ALL TREES, VEGETATION, BOULDERS LESS THAN 1 CUBIC YARD, AND DEBRIS AS NECESSARY TO INSTALL GUARDRAIL.  
  
FOR A DISTANCE OF 4' BEHIND GUARDRAIL, CLEAR AND GRUB ALL VEGETATION EXCEPT TREES OF 4" CALIPER OR GREATER. REMOVE ANY BRUSH PILES, LEAF PILES, OR DEBRIS WITHIN THE 8' STRIP TO BE CLEARED.
- CHIP BRUSH AND TREES AND SPREAD WOOD CHIPS EVENLY OVER CLEARED AREA.
- LEGALLY DISPOSE OF ALL DEBRIS, ROOTS, AND OTHER CLEARED ITEMS.

SECTION  
**1** ALTERNATE 1 - STEEL GUARD RAIL & CLEARING DETAIL  
1/2" = 1'-0"

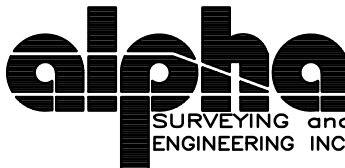
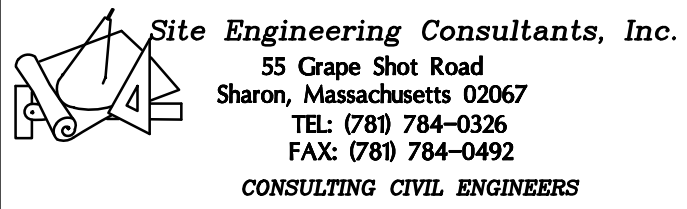


PLAN  
**2** ALTERNATE 1 - PLAN OF STEEL GUARD RAIL AND CLEARED STRIP ALONG POND END SCHOOL LANE  
1" = 16'



Carolyn Cooney & Associates

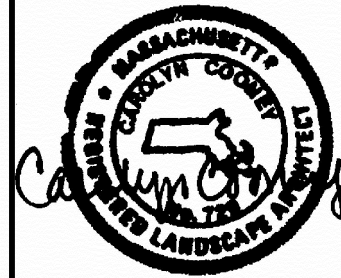
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REVISIONS



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TITLE:

ALTERNATE  
NO. 1

Scale AS NOTED Date JUNE 3, 2014  
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DWG No.

L-17