

PROJECT MANUAL

Waltham Parks Improvement Projects

McKenna Playground

10 Whitcomb Street
Waltham, Massachusetts 02453
Contract Number: 29117520118035
IDIS: 701

Prospect Terrace

25 Hanson Road
Waltham, Massachusetts 02451
Contract Number: 29117520118044
IDIS: 710

CITY OF WALTHAM
RECREATION DEPARTMENT
Sandra J. Tomasello, Director
510 Moody Street
Waltham, MA 02453
Ph 781-314-3475

And

CITY OF WALTHAM PLANNING DEPARTMENT
119 School Street
Waltham, MA 02451
Ph 781-314-3370

Prepared by:
CAROLYN COONEY & ASSOCIATES
Landscape Architects
13 Elm Street
Milford, MA 01757
Ph 508-478-8426; Fax 508-478-8607

Funded by:
U.S. DEPARTMENT OF HOUSING & URBAN DEVELOPMENT
Community Development Block Grant Funds

September, 2012

Bid Due: Friday October 12, 2012 at 10:00 am

Pre-Bid Meeting and Site Inspection: Thursday October 4, 2012 at 2:00 pm
Meet at McKenna Playground 10 Whitcomb Street, Waltham, MA 02452

SECTION 00050
CITY OF WALTHAM
MASSACHUSETTS

NOTICE TO BIDDERS, INCLUDING SUB-BIDDERS

WALTHAM PARK IMPROVEMENTS
MCKENNA PLAYGROUND AND PROSPECT TERRACE PARK
WALTHAM, MASSACHUSETTS

The City of Waltham, Massachusetts invites sealed bids from Contractors for the MCKENNA PLAYGROUND AND PROSPECT TERRACE PARK IMPROVEMENTS Waltham, Massachusetts. The work of the contractor includes demolition, clearing and grubbing, drainage structures, earthwork, bituminous paving of parking lot, pathways, and basketball court, chain link fencing, gates, signage, site furniture, athletic equipment, and planting.

PLANS, SPECIFICATIONS and other Contract Documents may be obtained after 4:00 pm September 17, 2012 by visiting the City's web Site at www.city.waltham.ma.us/open-bids Copies of Addenda will be emailed to the registered Bidders without charge.

Sealed **GENERAL BIDS** for this project will be accepted from eligible bidders at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02452 until **10:00 AM on October 12, 2012**, at which place and time they shall be publicly opened, read aloud and recorded for presentation to the Awarding Authority.

A **PRE-BID CONFERENCE and SITE INSPECTION** will be held for all interested parties at **2:00 PM on October 4, 2012 at 10 Whitcomb Street, Waltham, MA**. Attendance at this pre-bid conference is strongly recommended but not mandatory 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.

Bids shall be made on the basis of the Prevailing Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of the Massachusetts General Laws, a copy of which is available in the City web site or by request to jpedulla@city.waltham.ma.us and is made a part of the Contract. Bidders shall also comply with the Davis-Bacon prevailing wages.

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 the contract price will be required from the successful bidder.

NOTICE TO BIDDERS,
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WALTHAM PARKS IMPROVEMENTS

Waltham, MA

CDBG Fund # 290-175-2012-8035 & 290-175-2012-8044

IDIS # 701 & 710

Carolyn Cooney & Associates Inc.

Milford, MA

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, with the following verbatim text included in the description of services: **“The City of Waltham is a named additional insured for General Liability and Vehicle Liability under the contract”** in the amount of \$500,000 per occurrence and \$1,000,000 in the aggregate and Worker’s Compensation Insurance as prescribed by law. See paragraph 1.28.

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.

CONTRACT TIME. The time for Substantial Completion of the work is **60 calendar days** from the Contractor’s receipt of the Notice to Proceed.

CITY OF WALTHAM

Joseph Pedulla, MCPPO, Chief Procurement Officer
Purchasing Department
City Hall, 610 Main Street
Waltham, MA 02452

END OF SECTION

**NOTICE TO BIDDERS,
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SECTION 00100 - INSTRUCTION TO BIDDERS

PART 1 - GENERAL

1.01 SCHEDULE OF DATES

- A. Deadline for Advertisement for Bids: Central Register – September 17, 2012 4:00 P.M.
- B. 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 September 26, 2012.**
- C. Pre-bid walkthrough on **Thursday October 4, 2012, at 2:00 P.M** at the McKenna Playground, 10 Whitcomb Street, Waltham, MA.
- D. Questions and requests for interpretations may be submitted in writing to Jpedulla@city.waltham.ma.us up to and including: **September 28, 2012, 12:00 noon**
- E. Addenda will be issued to all registered contractors and copies will be posted on the city web site.
- F. General Bids Deadline: **10:00 A.M. on Friday October 12, 2012**, 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.

1.02 BIDDING PROCEDURE

- A. Bids for the work are subject to the provisions of General Laws, Chapter 30, 39M. 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.

1.03 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.

INSTRUCTION TO BIDDERS
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1.04 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.

1.05 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.

1.06 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.

INSTRUCTION TO BIDDERS
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- 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.

1.07 BID FORM

- A. General Bids shall be submitted on the "FORM FOR GENERAL BID"- Sect 00300 - 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.
- D. General Bidders shall submit one set of executed bid forms to the Awarding Authority.

1.08 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:
Waltham Parks Improvements

1.09 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 procedure set forth in the provision of Chapter 30, 39M of 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.

INSTRUCTION TO BIDDERS
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- 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 (100%) 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 **October 4, 2012, at 2:00 P.M.** at site of the project **10 Whitcomb Street, Waltham**. 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.

INSTRUCTION TO BIDDERS
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1.14 SECTION LEFT BLANK

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 60 **calendar days** after the date of commencement and following the receipt of the Notice-to-Proceed.

1.18 LATE FEES

- A. If the work is not Substantially Complete as specified in 1.17, the Contractor shall be charged a maximum of 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 location of its choosing.

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.

INSTRUCTION TO BIDDERS
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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 30, 39M, of the Massachusetts General Laws. A copy of which is available in the City web site or by request to jpedulla@city.waltham.ma.us and is made a part of the Contract. Contractors shall comply with the Davis-Bacon Prevailing Wage Schedule.

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 SECTION LEFT BLANK

1.26 COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS

A. Before a contract may be executed by the City, the successful Bidder will be required, in accordance with the provisions of M.G.L. Chapter 62C, Section 49A, to execute and file with the City the certificates in the Compliance Section:

B. 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/FENCING

A. The General Contractor shall provide all barricades/fencing to enclose the work area to prevent unauthorized access to the site.

1. The barricades/fencing 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/fences necessary to protect the work and the public shall be provided.

INSTRUCTION TO BIDDERS
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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.

- 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.

INSTRUCTION TO BIDDERS
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4. All Risk Insurance covering all Contractors' 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. The Certificate of Insurance shall read in the description of services as follows:
The City of Waltham is a named Additional Insured for General Liability and Vehicle liability as required by contract.

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 BUILDING PERMIT FEES

- A. Building permit fees will be waived for this project. However the contractor shall apply for every permit as required by City Ordinances.

1.32 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.

Signature of Individual or Corporate Name By:

(Signature of Corporate Officer if applicable)

Title: _____

Social Security Number or Federal Identification Number: _____

END OF SECTION

INSTRUCTION TO BIDDERS
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SECTION 00300

FORM FOR GENERAL BID

LOGAN PARK IMPROVEMENTS
WALTHAM, MASSACHUSETTS

General Bid Opening Date: 2:00 pm, October 12, 2012

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

A. Basic Price

The undersigned:

(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, \$** _____

PLEASE INCLUDE IN YOUR TOTAL BID PRICE \$2,500.00 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.
- 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

FORM FOR GENERAL BID
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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 **forty-five (45) 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.

SPECIAL CONDITIONS OF THE CONTRACT

The Contract Limit Line and work of this project lies within the 100-foot buffer zone of Bordering Vegetated Wetlands and the 200 foot Riverfront Area under the jurisdiction of the Waltham Conservation Commission and the Massachusetts Department of Environmental Protection. The Waltham Conservation Commission has issued an Order of Conditions, DEP File No. 316-0657 which conditions the work of this project, a copy of which follows and is made a Special Condition of the Contract.



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

Provided by MassDEP:
 316-0657
 MassDEP File #
 eDEP Transaction #
 Waltham
 City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):
 Middlesex South
 a. County
 3040
 c. Book
 N/A
 b. Certificate Number (if registered land)
 536
 d. Page
7. Dates: July 9, 2012 July 19, 2012 August 16, 2012
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):
 Layout and Materials Plan
 a. Plan Title
 Carolyn Cooney and Associates
 b. Prepared By
 5/21/2012
 d. Final Revision Date
 Anthony Stella
 c. Signed and Stamped by
 1"20
 e. Scale
 f. Additional Plan or Document Title
 g. Date

B. Findings

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

Approved subject to:

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



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

Provided by MassDEP:
 316-0657
 MassDEP File # _____
 eDEP Transaction # _____
 Waltham
 City/Town

B. Findings (cont.)

Denied because:

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

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

| Resource Area | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------|
| 4. <input type="checkbox"/> Bank | _____ a. linear feet | _____ b. linear feet | _____ c. linear feet | _____ d. linear feet |
| 5. <input type="checkbox"/> Bordering Vegetated Wetland | _____ a. square feet | _____ b. square feet | _____ c. square feet | _____ d. square feet |
| 6. <input type="checkbox"/> Land Under Waterbodies and Waterways | _____ a. square feet _____ e. c/y dredged | _____ b. square feet _____ f. c/y dredged | _____ c. square feet | _____ d. square feet |
| 7. <input type="checkbox"/> Bordering Land Subject to Flooding | _____ a. square feet | _____ b. square feet | _____ c. square feet | _____ d. square feet |
| Cubic Feet Flood Storage | _____ e. cubic feet | _____ f. cubic feet | _____ g. cubic feet | _____ h. cubic feet |
| 8. <input type="checkbox"/> Isolated Land Subject to Flooding | _____ a. square feet | _____ b. square feet | | |
| Cubic Feet Flood Storage | _____ c. cubic feet | _____ d. cubic feet | _____ e. cubic feet | _____ f. cubic feet |
| 9. <input checked="" type="checkbox"/> Riverfront Area | _____ a. total sq. feet 7166 _____ c. square feet 3972 _____ g. square feet | _____ b. total sq. feet 7166 _____ d. square feet 3972 _____ h. square feet | _____ e. square feet | _____ f. square feet _____ i. square feet _____ j. square feet |
| Sq ft within 100 ft | | | | |
| Sq ft between 100-200 ft | | | | |



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

Provided by MassDEP:
 316-0657
 MassDEP File #

eDEP Transaction #
 Waltham
 City/Town

B. Findings (cont.)

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

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



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B. Findings (cont.)

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

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

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

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



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

9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 316-0657 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.



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

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

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

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

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

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

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



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

- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.*) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.*) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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

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

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

See Attached



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
2. The _____ hereby finds (check one that applies):
 Conservation Commission
 - a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

| | |
|---------------------------------|-------------|
| 1. Municipal Ordinance or Bylaw | 2. Citation |
|---------------------------------|-------------|

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.
 - b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

| | |
|---------------------------------|-------------|
| 1. Municipal Ordinance or Bylaw | 2. Citation |
|---------------------------------|-------------|
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
 The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):



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E. Signatures

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

8/20/12
 1. Date of Issuance

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

6
 2. Number of Signers

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

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

Signatures:

[Handwritten Signature: David W. Kelly]
[Handwritten Signature: Jeffrey W. ...]
[Handwritten Signature: ...]
[Handwritten Signature: ...]
[Handwritten Signature: ...]

by hand delivery on

by certified mail, return receipt requested, on

Date

Date

8-20-12

F. Appeals

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

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

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



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G. Recording Information

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

City of Waltham Conservation Commission
 Conservation Commission

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

To:

City of Waltham Conservation Commission
 Conservation Commission

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

10 Whitcomb Street, Waltham, MA
 Project Location

316-0657
 MassDEP File Number

Has been recorded at the Registry of Deeds of:

Middlesex
 County

Book

Page

for: City of Waltham
 Property Owner

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

Book

Page

In accordance with the Order of Conditions issued on:

August 2012
 Date

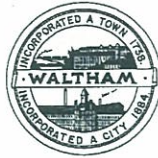
If recorded land, the instrument number identifying this transaction is:

Instrument Number

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

Document Number

Signature of Applicant



Waltham Conservation Commission
119 School Street
Waltham, MA 02452

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

DEP File Number: 316-657

Applicant: Sandra Tomasello, City of Waltham Recreation Department

Location: 10 Whitcomb Street, Waltham

Date of Issuance: August 2012

20. RECORDING AND ADMINISTRATION

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

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

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

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

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

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

21. PRIOR TO COMMENCEMENT OF WORK

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

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

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

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

22. LIMITS OF WORK/EROSION CONTROL

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

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

23. DURING WORK

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

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

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

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

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

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

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

24. UPON COMPLETION OF WORK

A. Storage of Petroleum Products

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

B. Fertilizer, Pesticides and Herbicides

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

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

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

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

25. SITE SPECIFIC CONDITIONS

A. Waltham DPW is responsible for the maintenance and cleaning of the walkways and the trench drains semiannually;

B. No salt or sand may be used

C. Stenciling of walkway as necessary to [indicate purpose]

D. Applicant and landowner must notify Commission at the start and completion of the project.

SECTION 01010

SUMMARY OF WORK

PART 1- GENERAL

1.01 PROJECT DESCRIPTION

- A. The project consists of improvements to the existing McKenna Playground, 10 Whitcomb St., Waltham, MA 02453, and to existing basketball court facilities at Prospect Terrace, 25 Hanson Road, Waltham, MA 02453 as described in the Contract Documents.

1.02 WORK TO BE DONE

- A. The work of this Contract includes, but is not necessarily limited to:
 - 1. McKenna Playground: Base bid: Repaving of existing parking lot, wooden guardrail, chain link fencing, asphalt pathways, traffic line panting, gates, clearing and grubbing, planting, benches, and miscellaneous site improvements. Alternates include benches, flagpole, trash receptacles, foul poles, electronic scoreboard and park sign.
 - 2. Prospect Terrace: Overlay of existing basketball court, painting, new backboard and goals, chain link fencing and gate. Alternates include additional chain link fencing.

1.03 CONTRACT TIME AND SEQUENCING

- A. The time for Substantial Completion of the work is divided into two phases as follows:
 - 1. The time for substantial completion for the parking lot area improvements is 75 days from the Contractor's receipt of the Notice to Proceed. The work of the parking lot area shall include new vehicular and pathway paving, guardrail, chain link fence, parking lot signage, steel service gate, bronze plaque, and fixed bollards. Line painting may be completed in the period described in paragraph A.2 below.
 - a. Within the 75 day time period, the Contractor shall sequence the work of ordering, demolition, and repaving to minimize the time that the parking lot is closed to the public.
 - 2. The time for substantial completion of the remainder of the project is 120 calendar days from the receipt of Notice to Proceed. Completion of lawn and grass seeding is not considered necessary to achieve Substantial Completion.

- B. The Contractor shall submit shop drawings, data and samples and place his/her order sufficiently early to permit consideration and approval by the Landscape Architect before materials are necessary for incorporation into the Work. Any delay resulting from the Contractor's failure to do so shall not be used as a basis of a claim against the Owner.

1.04 CONTRACT DOCUMENTS

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

1.05 INSPECTION OF THE SITE

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

1.06 CONTRACTOR'S USE OF THE SITE

- A. The Contract Limit Line shown on the Drawings defines the boundary of the site available to the Contractor for construction purposes.
- B. The Contractor shall furnish his/her own toilet facilities on-site.
- C. 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.
- D. 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 site where construction is occurring and for the safety of the general public.
- 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 Limit of Work Line, which for this project is defined by the temporary construction fencing shown on the Drawings.
- D. The requirement for a temporary construction fence in the designated area of the site does not relieve the Contractor from his/her responsibility of carrying out the incidental work items outside of the fence in safe manner. 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, Waltham Conservation Commission 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 \$2500 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 01040 - 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 the improvements to McKenna Playground and Prospect Terrace 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.

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.
1. Separate payment applications shall be made for McKenna Playground and Prospect Terrace.
- 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:
1. List of subcontractors
 2. Schedule of Values
 - a. Provide separate schedule of values for McKenna Playground and Prospect Terrace.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Products list.
 5. Submittals Schedule (preliminary if not final).
 6. Copies of permits.
 7. Initial progress report.
 8. Certificates of insurance and insurance policies.
- D. Refer to Section 01700 - Project Close-out for additional requirements for payments at Substantial Completion and Final Completion.

1.03 ADDITIONAL WORK

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

END OF SECTION

SECTION 01028

CHANGE ORDER PROCEDURE

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to Attachment A and D of the Contract, concerning Change Orders. All Change Orders must be signed and approved by the Chief Procurement Officer and the City Auditor prior to execution of the Work. No work is to be performed until the Mayor signs and approves the Change Order.

1.02 SCOPE OF WORK

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

1.03 SUBMITTALS

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

1.04 PRODUCT HANDLING

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

1.05 CHANGES INITIATED BY THE OWNER

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

1.06 CHANGES INITIATED BY THE CONTRACTOR

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

1.07 PROCESSING PROPOSAL REQUESTS

- A. In response to each Request for Proposal, the Contractor shall:
 - 1. Submit to the Landscape Architect for review one copy of completed Change Order Form (Appendix A of the Contract).
 - 2. Meet with the Landscape Architect as required to explain costs and, when appropriate, 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 return three copies to the Landscape Architect.

END OF SECTION

SECTION 01030

ALTERNATES

PART 1- GENERAL

1.01 GENERAL PROVISIONS

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

1.02 ALTERNATE BIDS

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

ADD ALTERNATE NO. 1:

McKenna Playground: Furnish and install 2 backless benches, 2 trash receptacles, 2 foul poles and one electronic scoreboard, as specified herein and shown on the Drawings. Price for alternate shall include demolition of existing features including footings.

ADD ALTERNATE NO. 2:

McKenna Playground: Furnish and Install one new flagpole and one new exterior park sign, as specified herein and shown on the Drawings. Price for this alternate shall include demolition of existing features including footings.

Prospect Terrace: Furnish and install a 4' height chain link fence on existing wall, complete-in-place, as specified herein and shown on the Drawings. Price for this alternate shall include demolition of existing fence, and infill of holes resulting from post removal.

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 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 equipment appears to the Owner to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character, or increase equipment and the Contractor shall conform to such order. Failure of the Owner to give such order shall in no way relieve the Contractor of his obligations to secure the quality of work and rate of progress required. In addition, the Contractor shall maintain his equipment, including mufflers, oil seals or gaskets, and air pollution control devices, in proper working order.

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 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 - \$168.00 per officer; and one full day - \$336.00 per officer. One-half day is the minimum charge per day.
- C. It is suggested that payments be made in person at the Treasurer's Office and that a photocopy of the bill be presented to the Treasurer's Office at the same time so

that it may be stamped "PAID" and then presented to the Landscape Architect by the Contractor as proof of payment.

- D. The Contractor will not be reimbursed for any detail that he fails to cancel when it is not required (inclement weather, change of plans, etc.). Reimbursement shall be made on all qualifying bills stamped "PAID" by the appropriate Treasurer's Office, less any amount for unnecessary details not cancelled by the Contractor, and presented to the Landscape Architect. Reimbursement may be entered in the next following request for payment.

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.

1.10 PERMITS AND CODES

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

1.11 INSPECTION AND TESTS

- A. Testing shall be as specified in Section 01400-Quality Control.
- B. All material and workmanship shall be subject to inspection and examination by the Landscape Architect at any and all times during construction.
- C. All work that is unsatisfactory, or fails to comply with the Specifications in the opinion of the Landscape Architect or City Officials, shall be corrected by the Contractor at his own expense to the satisfaction of the Landscape Architect.

1.12 SANITARY REGULATIONS

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

1.13 COORDINATION WITH UTILITIES

- A. The Contractor shall coordinate his/her Work with the utility companies to prevent damages or disruption to existing equipment and to coordinate new utility installations. The Contractor shall contact the utility companies owning underground equipment in the area of his work prior to commencing excavation. Contact with the utility companies shall be made sufficiently in advance so they can properly locate their equipment.
- B. The contractor shall be responsible for locating all site items such as utilities which could be affected by this Contract prior to the start of construction. The Contractor shall contact Dig-Safe (811) prior to the start of construction, and obtain a Certificate verifying that the location work has been completed. Contact the City of Waltham Engineer to verify the location of additional on-site utilities. Contact telephone and communications companies to verify location of cables.
- C. All right-of-way and site utilities (water, sewer, drainage) shall be inspected and approved by the City Engineer's Office.
- D. Site information: No representations are made indicating subsurface conditions. It is expressly understood that the Owner/Landscape Architect will not be responsible for interpretations or conclusions drawn therefrom by the Contractor.

1.14 FIRE PROTECTION

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

1.15 CLEANUP

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

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

- A. The Work under this Section consists of field staking the horizontal and vertical alignment of site improvements.

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 LAYOUT

- A. Property Line Layout

1. It is a requirement of this Contract that the McKenna Playground property line along Whitcomb Street be laid out by a Professional Land Surveyor registered in the State of Massachusetts.
 2. The property line shall be marked in the field and re-marked as necessary to provide delineation of the line throughout the construction process.
- B. 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.
- C. The Surveyor shall lay out the necessary grades and locations of the site improvements.
- D. 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.
- E. 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.

- 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 CONSERVATION COMMISSION MEETING

- A. For McKenna Playground, an on-site pre-construction meeting with the Waltham Conservation Commission is required prior to the beginning of any work.

3.03 PROJECT MEETINGS

- D. 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.
- E. Location: Project meetings will be held at the job site.
- F. 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.

G. 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.

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

the Landscape Architect has given specific written approval thereof.

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

1.04 LANDSCAPE ARCHITECT'S ACTION

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

1.05 PROGRESS SCHEDULES

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

clearly show: the submittal name, spec 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 shall pay for compaction testing as required in Section 02200 – Earthwork.
- B. If the Contractor chooses to use reclaimed basecourse, he/she shall be responsible for testing the gradation of the material to demonstrate compliance with the specifications.
- B. For all other testing, the Owner will select, engage, and pay for the services of an independent testing laboratory to perform structural tests on concrete and such other materials as the Landscape Architect/Engineer may deem appropriate.
- C. 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.
- C. The Contractor is responsible for furnishing, installing and maintaining the temporary barricades, signage and other safety devices described in the Traffic Management Plan, Drawing T-1.

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.
- B. The Contractor is responsible for providing temporary traffic control devices and barriers and for performing all procedures required by the Traffic Management Plan.

1.06 BARRIERS AND ENCLOSURES

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

1.07 SAFETY AND SECURITY

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

1.08 PROJECT IDENTIFICATION

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

1. Such sign shall be fabricated from:
 - (a) 1" thick MDO exterior plywood, laminated with waterproof glue. All edges of sign shall be banded with 1" x ½" pressure-treated pine banding.
 - (b) 1" 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.
- B. Sign shall be supported by 2 - 4" x 4" D. F. post supports set in 12" diameter concrete footings to a depth of four feet so that sign is raised a minimum of 4' above grade, or attached securely to the existing chain link fence at specified mounting height. All nails, nuts, bolts and other connecting hardware shall be galvanized. (Note: Alternate methods of support may be required due to site conditions) The sign shall be lettered by a professional sign painter in accordance with the general layout provided. Submit shop drawing indicating sign construction, lettering, and wording. Wording shall be approved by the City of Waltham Planning Department.
- C. At completion of the project, remove and dispose of the sign, supports, and footings and completely refurbish the area.
- D. The City of Waltham shall direct the location of the sign.
- E. Contractor shall post all required project postings, including EEO poster, Notice to All Employees, and Davis-Bacon wage rates, on the back of the sign under a weatherproof transparent cover (visqueen, plastic, etc).
- F. Typeface for sign shall be Helvetica with letters not to exceed 4" high or less than 3-3/4" high. Information shall be all capital letters, all lines centered.
- G. Background paint shall be black; lettering shall be white.
- H. Graphics for the sign shall be as indicated on the following pages.

1.09 DEP IDENTIFICATION SIGN

- A. Provide DEP Identification Sign with file number, as described in the Order of Conditions, Section C, General Conditions Under Massachusetts Wetlands Protection Act, Paragraph 10.

MCKENNA PLAYGROUND IMPROVEMENTS

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

City of Waltham Parks Department
City of Waltham Recreation Department

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

Landscape Architect
Carolyn Cooney & Associates
Milford, MA

Contractor

Funded By:
U.S. Department of Housing and Urban Development
Through:
Community Development Block Grant

PROSPECT TERRACE IMPROVEMENTS

CITY OF WALTHAM

MAYOR JEANNETTE A. MCCARTHY

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COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

Landscape Architect
Carolyn Cooney & Associates
Milford, MA

Contractor

Funded By:
U.S. Department of Housing and Urban Development
Through:
Community Development Block Grant

END OF SECTION

SECTION 01571

ORDER OF CONDITIONS

PART I - GENERAL

1.01 SUMMARY

- A. The Contract Limit Line and work of this project lies within the 100-foot buffer zone of Bordering Vegetated Wetlands and the 200 foot Riverfront Area under the jurisdiction of the Waltham Conservation Commission and the Massachusetts Department of Environmental Protection. The Waltham Conservation Commission has issued an Order of Conditions, DEP File No. 316-0657 which conditions the work of this project. A copy of this is included in the Special Conditions section.
1. The Contractor shall be responsible for reading the Order of Conditions and being familiar with each and every condition which has been set forth.
 2. The Contractor shall be responsible for satisfying the provisions of the Order of Conditions including but not limited to the following:
 - (a) Signage requirements
 - (b) Maintenance of existing wetland flags throughout the duration of the project
 - (c) Erosion, drainage and sedimentation controls
 - (d) Cooperation with the Conservation Commission inspections.
 - (1) Designation of a person responsible for supervising and inspecting drainage and erosion controls available on a 24-hour basis to communicate with the Conservation Commission.

PART II - PRODUCTS (Not Used)

PART III - EXECUTION (Not Used)

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
 - 7. Final Completion.

1.03 FINAL CLEANING

- A. Immediately prior to Substantial Completion of the work, the Contractor shall perform all cleanup work as follows:
 - 1. Remove all waste materials and rubbish from the site and legally dispose of it.
 - 2. Remove all tools, equipment, machinery, surplus material, temporary enclosures, and any other material belonging to the Contractor or his Subcontractors.
 - 3. Clean all surfaces, fixtures, and equipment within the work areas, and any surfaces outside the work area which have been made dirty by the work of the contract. Leave the entire site clean and ready for use.

1.04 SUBSTANTIAL COMPLETION

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

1.05 AS-BUILT RECORD DRAWINGS

- A. General: Do not use As-Built Record Drawings for construction purposes. Protect As-Built Record Drawings from deterioration and loss. Provide access to As-Built Record Drawings for Architect's and Owner's reference during normal working hours.
 - 1. As-Built Record Drawings: Maintain and submit one set of black-line white prints of As-Built Record Contract Drawings and Shop Drawings.
 - (a) Mark As-Built Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, Subcontractor, or similar entity, to prepare the marked-up As-Built Record Prints.
 - (1) Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - (2) Accurately record information in an understandable drawing technique.

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

1.06 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.

1.02 SPECIAL CONDITIONS OF THE PROJECT

- A. The Contract Limit Line and work of this project lies within the 100-foot buffer zone of Bordering Vegetated Wetlands and the 200 foot Riverfront Area under the jurisdiction of the Waltham Conservation Commission and the Massachusetts Department of Environmental Protection. The Waltham Conservation Commission has issued an Order of Conditions, DEP File No. 316-0657 which conditions the work of this project, a copy of which is included as a Special Condition of the Contract. Refer to Section 01571 – Order of Conditions.
- B. Straw wattles and any other required erosion control devices shall be in place prior to any earth disturbing activities within the Riverfront Area or BVW buffer zones. Erosion control measures shall be as shown on the Drawings, and shall be maintained in a manner satisfactory to the Landscape Architect and the Waltham Conservation Commission. Erosion control measures shall be maintained throughout the duration of the contract.
- C. Prior to any work within the Riverfront area, the Limit of Work line within the Riverfront area shall be clearly marked with stakes, flags, or fencing and erosion control measures shall be in place. The Contractor shall obtain written approval from the Waltham Conservation Commission prior to proceeding.
- D. Prior to any work at the project site, the property line along Whitcomb Avenue shall be delineated by a registered Surveyor. Refer to 01050 – Field Engineering.

- E. Prior to any work, provide Tree Protection as specified in Section 3.04 Tree Protection and obtain written approval from the Waltham Conservation Commission before proceeding.

1.03 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. Erosion control
 - 2. Tree protection
 - 3. Marking the location of utilities within the Limit of Work Line.
 - 4. Demolition of items as noted on the Drawings.
 - 5. Removal of incidental site items not indicated on the site plan which will impede proposed construction.
 - 6. Clearing and grubbing in area indicated on the Drawings.
 - 7. Protection of existing site elements to remain.
 - 8. Provision of temporary construction fencing and execution of Traffic Management Plan
- C. It shall be the Contractor's option to pulverize existing bituminous concrete pavement that is scheduled for removal and to use pulverized bituminous concrete for base course of the parking lot, roadway and walkway pavement.
 - 1. The Contractor shall be responsible to remove and dispose of any pulverized asphalt in excess of that needed for basecourse.

1.04 RELATED WORK

- A. Section 01050 - Field Engineering: Layout of site improvements.
- B. Section 01500 - Temporary Facilities and Controls.
- C. Section 01571 - Order of Conditions
- D. Section 02200 - Earthwork.

1.05 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.

1.06 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.

1.07 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.

1.08 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.

1.09 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.

1.10 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.

1.11 CONDITIONS OF WORK

- A. The Work of this Project is subject to the conditions of the Order of Conditions issued by the Waltham Conservation Commission.
- B. The Work of this Project is subject to the restrictions of the City of Waltham Noise Ordinance. Refer to Section 01010 - Summary of Work, Section 1.06.
- C. Conduct the work 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.
- D. Schedule site preparation and removal work in connection with the progress schedule required by the General Conditions.
- E. 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.

- F. 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.
- G. No extra demolition shall be performed without first notifying and obtaining written approval of the Landscape Architect.

1.12 DRAINAGE AND EROSION CONTROL

- A. Upon entry to the site, the Contractor shall assume responsibility for site and subsurface drainage. During the Contract period the Contractor shall maintain drainage in a manner satisfactory to the Landscape Architect. At all times, the adjacent areas shall be protected and maintained in their existing conditions.
- B. It shall be the responsibility of the Contractor to render the site erosion-free, at all times during the Contract period. The Contractor shall take special precautions to prevent erosion run-off from slopes, drainage trenches, granular bases, structures, and other improvements. Hay bales, jute mesh, catch basin insert filtration bags, and siltation fabrics shall be used, as determined by the Landscape Architect and as shown on the Drawings.

1.13 DELIVERY, STORAGE AND HANDLING

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

PART 2 - PRODUCTS

2.01 LAYOUT AND STAKING

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

2.02 DUST CONTROL

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

PART 3 - EXECUTION

3.01 LOCATING UTILITIES & SITE ITEMS AFFECTING THE WORK

- A. Prior to site preparation and removals operation, the Contractor shall locate and mark all site items such as utilities which could be affected by site preparation and removals.
- B. Contact Dig-Safe (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 Engineering Department to verify the location of additional on-site utilities. Coordinate demolition work with utility companies. Dig-safe does not locate telephone and cable lines; contact the specific utilities involved for this information.

3.02 PROJECT CONDITIONS

- A. All apparatus, storage and the operation of work people in connection with activities under this Section shall be confined to the area within the Limit of Work Line as shown on the Contract Drawings and shall not encumber areas outside the site.
- B. Thoroughly wet down all work during demolition to prevent the spread of dust. Avoid flooding or contaminated run-off.
- C. All existing items to remain which are damaged by the Contractor will be repaired or replaced at the Contractor's expense. Replacement or repaired items shall be equal to new items as specified.
- D. The Contractor shall be responsible for the methods used in this work including properly protecting against damage to existing and proposed site improvements, structures, site features, utility lines, trees, lawns, etc. Check with municipality and local utility companies for locations of existing utilities which may be in use or abandoned. Investigate and ascertain that underground utilities are correctly located and that they have been shut off and/or abandoned before disturbing them.

3.03 PROTECTION

- A. The Contractor shall assume complete responsibility and liability for the safety and structural integrity of all work and utilities to remain during the performance

of all work.

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

3.04 TEMPORARY CONSTRUCTION FENCING

- A. Temporary Construction fencing shown on the drawings shall be 6' ht. chain link fencing with knuckled top and bottom fabric.

3.05 TRAFFIC MANAGEMENT PLAN

- A. Provide barricades and signage as shown on the Traffic Management Plan before beginning the site work.

3.06 TREE PROTECTION

- A. All trees within the Riverfront Area and within the Contract Limit Line which are 6" or greater in diameter shall be protected as shown on the Tree Protection Detail.

3.07 STRIPPING TOPSOIL

- A. Within the area designated for clearing and grubbing, strip topsoil:
 - 1. Strip to a depth 6" below proposed finished grade in planting areas
 - 2. Strip to full depth below finished grade of proposed pavements.
- B. Legally dispose of topsoil off-site.

3.08 CLEARING AND GRUBBING

- A. Remove trees, plants, undergrowth, other vegetation, debris, large boulders, and all other items within the area indicated for clearing and grubbing.

1. Fell trees in a manner to prevent injury to adjacent facilities and to trees scheduled to remain.
2. Remove all stumps and roots to a clear depth of 24" below proposed finished grade with the following exception:
 - a. In planting areas, trees of 12" diameter or greater may be cut and the stump ground to 6" below proposed finish grade.
- B. No mechanical equipment is allowed within the canopy or drip line of existing trees to remain.
- C. Fill depressions caused by clearing and grubbing operations with Suitable Fill as specified in Section 02200 Earthwork.
- D. Legally dispose of all removed material off-site at the end of each day.

3.09 CLEARING AND GRUBBING WITHIN THE DRIPLINE OF TREES TO REMAIN

- A. Where demolition work is required within the drip-line or canopy of existing trees to remain:
 1. Notify the Landscape Architect prior to excavating these areas.
 2. Hand dig in a manner which will cause minimum damage to root systems.
 3. Cut roots cleanly and to a depth 3" below final grade. Do not leave surface roots exposed. Prune injured roots clean backfill as soon as possible to the satisfaction of the Landscape Architect.
- B. Where trees have been disturbed within the dripline, deep water trees on a schedule and quantity as determined by the Engineer.

3.10 DEMOLITION OF 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.

3.11 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.

3.12 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.

1.02 SPECIAL CONDITIONS

- A. The Contract Limit Line and work of this project lies within the 100-foot buffer zone of Bordering Vegetated Wetlands and the 200 foot Riverfront Area under the jurisdiction of the Waltham Conservation Commission and the Massachusetts Department of Environmental Protection. The Waltham Conservation Commission has issued an Order of Conditions, DEP File No. 316-0657 which conditions the work of this project, a copy of which is included as a Special Condition of the Contract. Refer to Section 01571 – Order of Conditions.

1.03 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. Compaction of subgrade and installation of base course for bituminous concrete paving.
 - a. The existing base course of the parking lot may be reused. The Contractor shall be responsible to supply base course should additional material be needed.
 - b. It shall be the Contractor's option to pulverize bituminous concrete to be removed and disposed of, and use this material as reclaimed base course if

it meets the gradation requirements in this Section.

2. Compaction of cleared and grubbed areas
3. Miscellaneous fill for footings and excavations.
4. For spreading and compaction of loam, see Section 02950 Native Grasses.

1.04 RELATED WORK

- A. Section 02100 - Site Preparation & Demolition
- B. Section 01571 - Order of Conditions
- C. Section 02510 - Bituminous Concrete Paving
- D. Section 02800 - Site Furnishings
- E. Section 02950 - Planting

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. 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.

1.06 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.

1.07 SUBMITTALS

- A. Submit to the Landscape Architect:
 - 1. A representative sample of approximately 5 pounds for each type of fill material.
 - 2. Supplier or laboratory sieve analysis for each type of fill material demonstrating compliance with the Specifications.

1.08 TESTING OF RECLAIMED BASE

- A. Reclaimed base proposed for use as base course shall be tested to demonstrate compliance with the gradation requirements of the Specifications.

1.09 PERMITS AND CODES

- B. 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.
- C. 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.
- D. 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.

1.10 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:
 - 1. Maximum density and optimum water content determination by the ASTM D-1557-09 or AASHTO T-180 Modified Proctor laboratory test for On-site subgrade soils and Aggregate Basecourse.
 - 2. On-site: Provide one field density test of the subgrade, and one field density test in each compacted fill layer, in 6 separate locations. Locations shall be chosen by the Landscape Architect.

1.11 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.

1.12 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.

1.13 DEFINITIONS

- A. Fill and backfill shall be, for the purpose of this Specification, considered interchangeable terms and shall mean material to be used to bring existing or construction grades up to finish subgrade levels.

- B. The words “finish grade” as used herein mean the required final grade elevations indicated on the Contract Drawings. Where not otherwise directed, areas outside buildings shall be given uniform slopes between points for which finish grades are shown, or between such point and existing grade, except that vertical curves or roundings shall be provided at abrupt changes in slope.
- C. The word “subgrade” as used herein, means the required surface of subsoil, borrow fill or compacted fill.
- D. “Trench shall be defined as an excavation of any length where the width is less than twice the depth. All other excavations shall be classified as open.
- E. “Unsuitable Materials” shall include the following:
 - 1. Pavements, utility structures, building foundations and other manmade structures.
 - 2. Peat, muck, organic silt and other organic materials subject to decomposition, consolidation or decay.
 - 3. Miscellaneous fill including cinders, ash, glass, wood, masonry and metal.
 - 4. Ledge and boulders except as specified herein for fills.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

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

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

3. Material from excavation on the site meeting the above requirements as evidenced by testing may be used as “Suitable backfill” provided it has not been contaminated with unsuitable material.

B. Aggregate Base Course, Aggregate Backfill, Gravel Backfill & Gravel:

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

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

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

2.02 RECLAIMED PAVEMENT MATERIAL

- A. Reclaimed Pavement Material shall be sound, durable, crushed asphalt pavement meeting M1.03.0 free from organic, frozen, or other deleterious materials, conforming to the requirements of the Massachusetts Highway Department Section M1 and meeting the following gradation requirements M1.11.0 as modified below.

| | Sieve | Percent Passing |
|-------------|----------|-----------------|
| 2 in | 50 mm | 100 |
| 1-1/2 in | 37.5 mm | 95-100 |
| 3/4 in | 19 mm | 50-85 |
| No. 4 | 4.75 mm | 30-55 |
| No. 50 | 0.300 mm | 8-24 |
| No. 200 | 0.075 mm | 3-10 |
| Silts/Clays | | 0 |

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 unanticipated materials encountered which are greater than 1 cubic yard in size and which could not be reasonably inferred from surface inspection will be paid for as an adjustment to the Contract Price due to unanticipated subsurface conditions, or adjustment may be made to the layout to avoid excavation of same.
- 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 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 and 8 inches in loose depth for other materials compacted by heavy compaction equipment and not more than 6 inches in loose depth for material compacted by hand operated tampers.

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

3.06 COMPACTION

A. COMPACTION EQUIPMENT

1. Compaction equipment used for the Work is subject to approval by the Landscape Architect. Any equipment not originally manufactured for compaction purposes and equipment which is not in proper working order will not be approved.

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 for pavements, utility trench backfill, and footings: Compact each layer of backfill or fill material to 95 percent of maximum dry density.
2. Planting beds, lawn and native grass areas: Compact subgrade and loam 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 Contract Drawings or as directed by the Landscape Architect. Fill any depression that may appear during and after rolling with gravel and re-roll until the surface is true and even. Tolerance shall be 3/8 inch maximum above or below the cross-section grades and 3/8 inch maximum under a 10 foot line longitudinally.
- G. Maintain the surface of any layer in its finished condition until succeeding layer is placed. Properly drain the sub-base at all times.

3.08 GRADING

- A. The Contract 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 02510

BITUMINOUS CONCRETE PAVING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, as indicated on the Contract Drawings and/or as specified herein.
- B. The work shall include, but is not limited to, the following:
 - 1. Installation of new bituminous concrete pavement
 - 2. Overlay of existing 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
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 or Reclaimed Base Course as specified in Section 02200 - Earthwork.
 - 1. Subgrade and 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.

2.03 CRACK SEALANT FOR BASKETBALL COURT

- A. Crack sealant shall consist of a blend of asphalt cement and polyester fibers. The asphalt fiber blend shall consist of 6% fiber mass to mass of asphalt.

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.
- C. Basketball Court:
 - 1. Basketball court paving shall be thoroughly swept and power-washed to remove all dirt and debris from the surface. Surface shall be dry.
 - 2. Fill cracks greater than 1/8" with crack filler.

3.02 PATCHES AND NEW FULL DEPTH PAVING

- 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, when weather conditions are suitable. No bituminous material shall be applied when the temperature is below 32 F.
- C. The temperature of bituminous concrete mixture when delivered to the site shall conform to the following, with a tolerance of plus or minus 20 F.

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

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

3.04 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 (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 02590

COLOR COATING AND LINE PAINTING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

- A. Work under this Section shall include 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. Pavement markings
 - 2. Color coating and line painting basketball court at Prospect Terrace
 - 3. Replacement of color coating at McKenna Playground where it has been removed due to construction.

1.03 RELATED WORK

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

1.04 SUBMITTALS

- A. Submit the following in accordance with the requirements of the General Conditions:
 - 1. Paint: Submit manufacturer's product data demonstrating specification compliance for pavement marking, and fortified and non-fortified paint for area painting.
 - (a) Submit color samples of manufacturer's standard colors for basketball court painting for final selection by the Owner.

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

- 2. Submit installer name and evidence of qualifications.

1.05 REFERENCES

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

1.06 QUALIFICATIONS

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

1.07 REGULATORY REQUIREMENTS

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

1.08 DELIVERY STORAGE AND HANDLING

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

1.09 ENVIRONMENTAL REQUIREMENTS

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

PART 2 - MATERIALS

2.01 PAINT

- A. Vehicular pavement line marking:
 - 1. Paint for pavement line marking of roads and parking lots shall be a fast drying medium oil alkyd specifically manufactured for use as a traffic paint and shall meet the specifications of Section M7.01.10 of the Massachusetts Standard Specifications for Highways and Bridges. Paint shall be ProMar Traffic Marking Paint by Sherwin-Williams or approved equal. Acceptable manufacturer's: Devoe & Reynolds, Glidden, Benjamin Moore.
 - 2. Paint color shall be white.

B. Court Paint

1. Area Paint: Paint for area color coating shall be a fortified 100% acrylic latex emulsion with silica additive. Paint shall contain no alkyds, butadiene styrene or vinyls and shall be thinned with water. Acceptable manufacturers California Paints, Nova Sport, Dalton Enterprises, Inc., or equal.
 - a) Fortification shall be by addition of silica sand, pre-mixed at manufacturer's plant. No sand or silica shall be added to the emulsion in the field.
 - b) Finish coat shall be as described above except that it shall be a non-fortified acrylic latex emulsion.
 - c) Basketball Court shall be two colors, with white lines. Colors will be chosen by the Owner from manufacturer's standard color choices.
2. Line Paint: Paint for marking game lines shall be factory-mixed non-bleeding paint specifically formulated for marking asphaltic concrete surfaces for line painting. Paint shall be 100 percent acrylic latex emulsion type, containing no alkyds, butadiene styrene, or vinyls and shall be thinned with water only. Acceptable manufacturers California Paints, Neyra Industries, The Glidden Co., or equal.

PART 3 - EXECUTION

3.01 APPLICATION OF PAVEMENT MARKINGS-GENERAL

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

3.02 VEHICULAR PAVEMENT LINE MARKING

- A. Paint shall be applied according to the manufacturer's directions, including 4 to 6 week curing period for pavement before application.
- B. Pavement surface shall be dry and free of sand, grease, oil, and other foreign substances prior to the application. The ambient air temperature is to be a

minimum of 45 degrees F and rising at the start of paint application.

- C. Width of lines shall be 4" unless otherwise noted. Areas shown as diagonal striping on the Drawings shall consist of 4" wide lines, 12" o.c.
- D. Apply two coats of paint in the locations and colors indicated on the drawings. Thickness of each coat shall be as recommended by the manufacturer. Painted markings are to be protected until they are dry enough to withstand traffic without tracking or being damaged.
 - 1. Stencil handicapped parking spaces with the international symbol of access. Size shall be approximately 39" x 48".
 - 2. Striped handicapped access aisles with diagonal striping as described above.

3.03 AREA PAINTING FOR BASKETBALL COURT

- A. Courts shall not be painted until the manufacturer's specified curing period has elapsed.
- B. Sweep and air clean area to be surfaced.
- C. Apply two coats of fortified surface paint at a rate of approximately .05 gallon per square yard per coat.
- D. Apply one coat of non-fortified finish paint at a rate of approximately .05 gallon per square yard.
- E. Apply line paint as described below.

3.04 LINE PAINTING FOR BASKETBALL COURT

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

3.05 GUARANTEE AND ACCEPTANCE

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

END OF SECTION

SECTION 02725

DRAINAGE PIPE

PART I - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

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

1.03 RELATED WORK

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

1.04 TRAFFIC POLICE

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

1.05 REFERENCES

- A. 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. ASTM D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10 lb. (4.54 kg) Rammer and 18 inch (457 mm) Drop.
5. ASTM D2729 Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
6. ASTM D1248 HDPE (High Density Polyethylene)(HDPE) Pipe and Fittings.
7. ASTM F2648 Test Methods for Non-Pressure (gravity flow) polyethylene (PE) pipes and fittings.

1.06 SHOP DRAWINGS/MANUFACTURER'S CUTS AND SPECIFICATIONS

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

1.07 SAMPLES

- A. The Contractor shall submit all samples as requested in accordance with the provisions of the General Conditions. Samples accepted will be returned to the Contractor within five (5) days and may be incorporated into the work. Samples not accepted will be returned for disposition by the Contractor.
- B. One (1) square foot filter fabric.

1.08 CODES, ORDINANCES AND PERMITS

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

1.09 SUBSTITUTIONS

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

1.010 RECORD DRAWINGS

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

1.10 SITE VISITATION

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

1.11 REFERENCE STANDARDS

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

2.04 FILTER FABRIC

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

2.05 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.

2.06 APPURTENANCES

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

PART 3 - EXECUTION

3.01 PIPE INSTALLATION

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

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

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

3.02 DRAINAGE PIPE

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

3.03 PERFORATED DRAIN PIPE TRENCH

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

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

3.04 WATER REMOVAL

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

END OF SECTION

SECTION 02728

DRAINAGE STRUCTURES

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

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

1.03 RELATED WORK

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

1.04 TRAFFIC POLICE

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

1.05 REFERENCE STANDARDS AND SPECIFICATIONS

- A. Reference to the standards, specifications and tests of technical societies,

organizations and governmental bodies is made in the Contract Documents.

- B. AASHTO - American Association of State Highway and Transportation Officials (tests or specifications).
- C. ASTM - American Society for Testing and Materials.
- D. MHD Standard Specifications: Mass. Standard Specs. - Standard Specifications for Highways, Bridges and Waterways, 1988 Edition, the Commonwealth of Massachusetts, Department of Public Works, including any and all Addenda.
- E. Commonwealth of Massachusetts, Department of Public Works, Construction Standards, 1977.
- F. Municipal Standard Specifications and Procedures, as applicable.
- G. OSHA Construction Regulations Title 29 CFR Part 1926.
- H. Americans with Disabilities Act Accessibility Guidelines (ADAAG).

1.06 CODES, ORDINANCES AND PERMITS

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

1.07 SUBMITTALS / SHOP DRAWINGS

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

D. The Contractor shall provide shop drawings showing the layout, dimensions, configuration, and materials of the proposed stormwater recharge system.

PART 2 - MATERIALS

2.01 CLAY SEWER BRICKS (FOR ADJUSTING NEW FRAMES)

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

2.02 CEMENT MORTAR (FOR ADJUSTING NEW FRAMES)

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

2.03 CEMENT CONCRETE

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

2.04 PRECAST CONCRETE DRAINAGE STRUCTURES

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

2.05 CASTINGS

- A. Iron castings for Catch Basins & Manholes (frames, grates and covers) shall conform to MassHighway Construction Manual standard designs and to the requirements of AASHTO Designation M105, Class No. 30, Gray Iron Castings, unless otherwise specified. Test Bar B, 1.20 inches in diameter.

1. Catch basin frame and grate casting(s) shall be 24" round grate conforming to ADA requirements.
2. Manhole Frames and Covers: Cover shall be of minimum weight of 150 pounds, solid cover, with water tight top flange, with a pick-hole, complying with the requirements of the City of Waltham Engineering Department.

2.06 FILTER FABRIC

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

2.07 STORM WATER RECHARGE CHAMBERS

- B. 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.
- C. 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".
- D. Provide clean-out structures as shown on the Drawings.

PART 3 - EXECUTION

- 3.01 Structures of various types and depths shall be constructed to the line and grades, dimensions and design shown on the plans and as directed with the necessary frames, gratings, covers, aluminum steps, etc., and in accordance with these Specifications after verification of inverts of utilities to remain.
- 3.02 The bricks and blocks (if required) shall be wetted as necessary before laying. All joints in brick masonry shall be thoroughly flushed full of mortar and no joints on the inside face shall be greater than one-quarter (1/4) inch. After the bricks and blocks are laid up, the outside of the structure shall be plastered with one-half (1/2) inch thick mortar coat.
- 3.03 Connections will be carefully made to all existing and proposed lines to the grades and elevations shown on the contract drawing.
- 3.04 All catch basins shall have a cast iron hinged metal hood trap installed over the outlet pipe or an oil trap outlet as detailed in the drawings. Use twelve (12) inch hoods, unless sizes equal to the specified pipe sizes are available.

- 3.05 Unless otherwise directed or specified, two (2) weep holes shall be built into the walls of all new structures. Each weep hole shall consist of a section of four (4) inch pipe or equivalent opening to carry water through the wall of the structure. The outside end of the pipe or opening shall be covered with a one-quarter (1/4) inch mesh galvanized wire screen 23 gauge satisfactorily fastened against the wall. The drain to the weep hole shall be excavated and back-filled with two (2) cubic feet of broken rock or crushed stone. The crushed stone shall be placed against and over the end of the pipe or opening with a section of filter cloth to prevent the entrance of fine material. Only one (1) type of weep hole shall be used consistently throughout the project.
- 3.06 Suitable materials obtained from the excavation or from borrow shall be placed between the outside of the structure and the limits of the excavation, uniformly distributed in successive layers not exceeding six (6) inches in depth and thoroughly compacted by tamping with mechanical rammers or tampers. When required, the backfill material shall be moistened during the compacting. Compaction with iron hand tampers having a tamping face not exceeding twenty-five (25) square inches may be allowed, but only after permission has been given by the Engineer.
- 3.07 All materials removed in the excavation for catch basins, manholes, or storm water recharge units and remaining after the filling about the finished structure has been made shall be used wherever possible within the project or removed and satisfactorily disposed of outside of the project limits without additional compensation.
- 3.08 The embedded ends of the aluminum ladder steps shall be painted with zinc chromate or bitumastic, and allowed to completely dry before they are installed. Installation shall be as shown on the plans.
- 3.09 Frame castings for structures shall be set in full mortar beds true to the lines and grades as directed.
- 3.10 Where directed, the castings shall be temporarily set at such grades as to provide drainage during the construction.
- 3.11 In general, all methods for installation of the catch basin and manhole units, brick adjustments and mortaring, and installation of frames, grates and covers, shall conform to Section 201 of the "Standard Specifications".
- 3.12 Installation of Storm Water Recharge Units:
- A. Form bottom of excavation clean and smooth to correct elevation.
 - B. Stormwater recharge chambers shall be installed as per manufacturers requirements and guidelines, and as shown on drawings.
 - C. Establish elevations and pipe inverts for inlets and outlets as indicated.

END OF SECTION

SECTION 02800

SITE IMPROVEMENTS

PART 1- GENERAL

1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.

1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, and as indicated on the Drawings and as specified.
- B. The work shall include, but is not limited to, the following:
 - 1. McKenna Playground
 - (a) Alternate No. 1: Supply and install two (2) backless benches
 - (b) Alternate No. 1: Supply and install two (2) trash receptacles
 - (c) Supply and install new canvas canopy for shade shelter
 - (d) Alternate No. 2: Supply and install new flagpole
 - (e) Supply and install removable and fixed bollards
 - (f) Paint fire hydrant and fire hydrant bollards
 - (g) Clean graffiti from Granite Entrance Monument

1.01 RELATED SECTIONS

- A. Section 02200 - Earthwork.
- B. Section 02510 - Bituminous Concrete Paving.
- C. Section 03300 - Cast-in-Place Concrete.

1.02 SUBMITTALS

- A. Submit the following in accordance with the requirements of section 01300 - Submittals:
 - 1. Manufacturers catalog cuts, specifications, and color chart, demonstrating compliance with the Specifications.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle metal fabrication items to prevent damage and deterioration. Store assembled items off the ground.

1.04 REFERENCE STANDARDS

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein:
 1. American Institute of Steel Construction, (AISC).
 2. American Welding Society, (AWS)
 3. American Society for Testing and Materials, (ASTM).
 4. National Association of Architectural Metal Manufacturers, (NAAMM).
 5. Americans with Disabilities Act Accessibility Guidelines (ADAAG)
 6. Massachusetts Architectural Access Board Regulations, CMR 521 (MAAB)

1.05 EXAMINATION OF SITE AND DOCUMENTS

- A. The Contractor shall inform him/herself of existing conditions of the site before submitting his/her bid and shall be fully responsible for carrying out all required site work to fully and properly execute the work of the Contract.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Steel fabrication for site improvements shall be accomplished using the highest standards of workmanship. Individual steel pieces to be welded shall be saw cut and carefully fitted together. All connections shall be full welded and ground flush and smooth. All fabricated steel items shall be fine sanded throughout prior to finishing to produce a high standard of surface smoothness. All surfaces and connections shall be without visible grinding marks, surface differentiation or variation.
- B. Arc welding procedures shall conform to the current standards of the AWS. All welds shall be as designated on the plans and shall be ground smooth and flush to a neat finish. All welds shall be watertight and care shall be taken to minimize distortion due to heat. Metal shall not be primed, painted or galvanized before welding.

2.02 BENCHES – Alternate No. 1

- A. McKenna Park

1. Backless benches shall be manufactured by Wabash Valley Manufacturing Inc., 505 East Main Street, Silver Lake, IN, as supplied by M.E. O'Brien and Sons, Inc., 93 West Street, MA or approved equal as follows:
 - a) Coating for these items shall be 1/4 inch plastisol coating, heat-fused and permanently bonded to the steel.
 - b) Color shall be chosen by the Landscape Architect/Owner from manufacturer's standard color choices.

2.03 TRASH RECEPTACLES – Alternate No. 1

A. McKenna Playground

Trash receptacle shall match existing trash receptacle which is "LR300P" by Wabash Valley Manufacturing, Inc., Silver Lake, IN 46982. Unit shall have 32-gallon capacity, cover and be post mounted as shown on the Drawings. Color shall be chosen by the Owner from manufacturer's standard color choices.

2.04 SHADE CANOPY (McKenna Playground)

- A. Shade canopy shall replacement canopy for model "R101508" by Shade Systems, Inc. Ocala, FL. Color shall be chosen by the Owner from the manufacturer's standard color choices.

2.05 FLAGPOLE - Alternate No. 2

- A. Flagpole shall be manufactured of fiberglass woven roving and polyester resin with more than 75% of the reinforcing fiberglass in the vertical plan, resulting in an axial tensile strength exceeding 40,000 psi.
- B. Height of the flagpole shall be 30 feet.
- C. Flagpole shall have an ENTASIS taper and smooth high-gloss surface of high build modified polyester.
- D. Flagpole shall come equipped with the following components: gold anodized aluminum ball, internal halyard, vinyl covered counterweight, polyester wire core retaining ring, and locking hand-hole door to internal cam and cleat (provide 2 keys), flash collar and ground sleeve.

2.06 BOLLARDS

- A. Fixed and removable bollards shall be Dumor Model 400-36 or approved equal.
 1. Steel shall be coated with zinc-rich epoxy with a polyester powder coat, or equal finish.

2.07 PAINT FOR HYDRANT AND BOLLARDS

- A. Paint for fire hydrant shall be an acrylic rust-inhibitive primer with exterior gloss enamel finish coat. Paint shall be of the type and color acceptable to the City of Waltham Fire Department.

2.08 CLEANERS FOR GRANITE ENTRANCE MONUMENT

- A. Paint stripper shall be a methylene chloride or alkaline gel such as Hydroclean HT-350 Epoxy and Urethane Paint Remover, or HT-716 Heavy Duty Paint Remover.
- B. Cleaner for granite shall be an industrial strength, biodegradable cleaner such as Hydroclean HT-626 Granite Cleaner

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Site improvements shall be fabricated and fastened in accordance with the Drawings and approved Shop Drawings. Site improvements shall be installed in a level, plumb condition, true to the lines and grades shown on plans.
- B. The Contractor shall be responsible for timing the delivery of items so as to minimize on-site storage time prior to installation and the Contractor shall handle site improvement materials and products in such a manner as to minimize any damage to the products' finish. Stored materials and items must be protected from weather, careless handling and vandalism. Suitable touch-up material shall be readily available to repair any damage immediately.
- C. Shim bolt connections as necessary and secure bolts. Exposed bolts shall be fastened with an approved semi-permanent adhesive to protect against vandalism.
- D. Field touch-up all abraded or scratched surfaces with manufacturers recommended paint and/or cold galvanizing materials.

3.02 CONCRETE FOOTINGS

- A. Cast-in-place concrete footings for site improvements shall be conform to the requirements of Section 03300 - Cast-in-place Concrete and shall be 4,000 psi minimum strength at 28 days.
- B. Compacted gravel backfill shall conform to the requirements of Section 02200 - Earthwork.

3.03 FLAGPOLE (Alternate No. 2)

- A. Install new flagpole plum and vertical and in accordance with manufacturer's instructions.
- B. Footing for flagpole shall be 4,000 psi strength concrete, minimum, or higher if recommended by the manufacturer.

3.04 PAINT HYDRANTS AND FIRE HYDRANT BOLLARDS

- A. Scrape all rust, dirt and debris from existing hydrant and bollards.
 - 1. Prime bare metal with metal primer.
- B. Apply two coats of finish paint

3.05 GRAFFITI REMOVAL AND CLEANING OF GRANITE MONUMENT

- A. Test removal with a solvent based and an alkaline based remover. Removal of graffiti may require one or both of these types of paint strippers.
- B. Take all necessary precautions for the protection of all property and the safety of the public during cleaning operations. Protect surrounding areas from contact with paint stripper, rinsing and overspray.
- C. Apply paint strippers according to manufacturer's instructions. Rinse clean with water to remove all residue.
- D. Repeat the procedure until removal of graffiti is obtained.
- E. After the paint has been removed, if there is a faint outline of the graffiti in the pores of the granite, clean with granite cleaner.

END OF SECTION

SECTION 02825

CHAIN LINK FENCING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

- A. Work under this Section includes installation of a 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 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.**
 - 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. Pipe shall be Type 1, ASTM F 1083 round cold-formed steel standard weight Schedule 40, Minimum yield strength shall be 25,000 psi. Galvanizing shall conform with ASTM A-120 standard weight Schedule 40 except the hydrostatic testing requirement is waived.
 - 2. Galvanized steel parts shall be coated with a polyvinyl chloride (PVC) plastic resin finish. PVC coating for framework shall meet the above specifications for fabric coating. Frame color shall match fabric color.
 - 3. Sizes for fence posts, gate frames and other framework members shall be as shown on the Drawings.

a) Weights for posts shall be as follows:

| Outside Diameter (Inches) | Minimum Pounds per Foot Tolerance $\pm 5\%$ |
|---------------------------|------------------------------------------------|
| 1.66 | 2.27 |
| 2.375 | 3.65 |
| 2.875 | 5.79 |
| 4.00 | 9.11 |

4. Provide continuous top rails in manufacturer’s longest lengths, with expansion type couplings for each joint. Provide necessary fittings for attaching top rail to each gate, corner, pull and end post.

C. Hardware and accessories: Provide galvanized (ASTM A153) PVC-coated accessories. PVC coating for accessories shall meet the above specifications for fabric coating. Nuts and bolts shall be galvanized but not vinyl coated. Nuts and bolt heads shall be coated with PVC touch-up paint after installation to match fabric color.

1. Post Tops: Galvanized, pressed steel or malleable iron, weather tight closure caps, 1 top for each post. Where top rail is used, provide tops with openings to accommodate top rails. Provide one (1) 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 (New and Reset)

- A. Fabric, framework and accessories shall be as specified above for fencing.
- B. Hardware materials: Hot dipped galvanized steel or malleable iron shapes to suit gate size. Field coat moveable parts such as hinges and latch with PVC touch up paint, provided by manufacturer, to match adjacent finish.
 - 1. Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° inward.
 - 2. Latch: Forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.

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 approximately 2" 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 02835

STEEL SERVICE GATE

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. 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 and includes.
- B. The work shall include, but is not limited to, the following:

- 1. Steel Gate with Post-mounted Lock Box

1.03 RELATED SECTIONS

- A. Section 02200 - Earthwork
- B. Section 02510 - Bituminous Concrete Paving
- C. Section 03300 - Cast-in-Place Concrete

1.04 SUBMITTALS

- A. Submit the following in accordance with the requirements of section 01300-SUBMITTALS:
 - 1. Steel gate: Submit complete shop drawings for steel vehicular gate showing details of fabrication and welds.
 - 2. Submit standard paint colors for selection by the Owner.

1.04 DELIVERY, STORAGE AND HANDLING

- B. Deliver, store, and handle metal fabrication items to prevent damage and deterioration.
- C. Store assembled items off the ground.

1.05 REFERENCE STANDARDS

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein.:
 - 1. American Institute of Steel Construction, (AISC).
 - 2. American Welding Society, (AWS)
 - 3. American Society for Testing and Materials, (ASTM).
 - 4. National Association of Architectural Metal Manufacturers, (NAAMM).

PART 2 - PRODUCTS

2.01 STEEL GATE

- A. Steel pipe shall be seamless in conformance with ASTM Designation A53, Schedule 40, Grade A.
- B. Steel plate shall conform to ASTM Designation A36.
- C. Gate shall be hot-dip galvanized after fabrication. Galvanizing shall comply with ASTM A123, ASTM A 153, or ASTM A386. Provide at least 2 oz./sq. ft. zinc coating.
- D. After galvanizing, provide shop applied prime and finish coat as follows:
 - 1. One Coat Primer (dry film thickness 3.0 to 4.0 mils) of Tnemec No. 66 Hi-Build Epoxoline” Epoxy; Porter No. 4361 MCR-43 High Build Epoxy, Dupont “Corlar epoxy primer, or equal.
 - 2. Apply two finish coats (dry film thickness 1.5 to 2.0 mils per coat) as follows: Tnemec No. 74 Endura-Shield IV Acrylic Polyurethane, Porter No. 8731 Hythane Ultra Acrylic Polyurethane, DuPont Imron Polyurethane, or equal.
- E. Field touch up damaged or abraded galvanized surfaces with ZRC Cold Galvanizing Compound, PPG Speedhide Galvanized Steel Paint, or Tnemec 90-93 Zinc rich primer or approved equal, and touch up with above finish paint.
- F. Key Security Lock Box shall be equal to 1650 Knox Residential Box supplied by the Knox Company, Irvine, CA and of type approved by the Waltham Fire Department.
 - 1. The Contractor will need to apply to Waltham Fire Prevention and complete an application in order to purchase the Knox Box.
 - 2. Lock Box shall be securely shop-welded to lock post of vehicular gate, facing swing post.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Site improvements shall be fabricated and fastened in accordance with the Drawings and approved Shop Drawings. Site improvements shall be installed in a level, plumb condition, true to the lines and grades shown on plans.
- B. Steel fabrication for site improvements shall be accomplished using the highest standards of workmanship. Individual steel pieces to be welded shall be saw cut and carefully fitted together. All connections shall be full welded and ground flush and smooth. All fabricated steel items shall be fine sanded throughout prior to finishing to produce a high standard of surface smoothness. All surfaces and connections shall be without visible grinding marks, surface differentiation or variation.
- C. Arc welding procedures shall conform to the current standards of the AWS. All welds shall be as designated on the plans and shall be ground smooth and flush to a neat finish. All welds shall be watertight and care shall be taken to minimize distortion due to heat. Metal shall not be primed, painted or galvanized before welding.
- D. The Contractor shall be responsible for timing the delivery of items so as to minimize on-site storage time prior to installation and the Contractor shall handle site improvement materials and products in such a manner as to minimize any damage to the products' finish. Stored materials and items must be protected from weather, careless handling and vandalism. Suitable touch-up material shall be readily available to repair any damage immediately.
- E. Shim bolt connections as necessary and secure bolts. Exposed bolts shall be fastened with an approved semi-permanent adhesive to protect against vandalism.

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.

3.03 STEEL GATE

- A. Install gate plumb, with swing arm level, and to layout dimensions shown on the Drawings.

END OF SECTION

SECTION 02845

WOOD GUARDRAIL

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 wood 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 for all new items demonstrating compliance with the Specifications.

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 a Type "S" Single Rail Guide Rail system as manufactured by Ryther Purdy Lumber Company, 174 Elm Street PO Box 622. Old Saybrook, CT. 06475 (Telephone: (860) 388-4405, Fax 860-388-9401) or approved equal conforming at a minimum to the following requirements.
 - 1. Guardrail shall be pre-manufactured, constructed of solid Western Red Cedar, planed to a smooth splinterless surface.
 - 2. Guardrail shall be stained dark green.
 - 3. Guardrail posts shall be dimensioned, chamfered and mortised to accept rails, as shown on the Drawings.
- B. Wood guardrail shall be stained dark green.

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.

END OF SECTION

SECTION 02850

ATHLETIC EQUIPMENT

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE OF WORK

- A. Prospect Terrace - Base Bid: Provide two new basketball backboards and goals, paint existing basketball standards
- B. McKenna Playground - Alternate #1: Provide and install new 5' x 10' Electronic Scoreboard
- C. McKenna Playground - Alternate #1: Provide and install two new 30' ht. foul poles.

1.03 RELATED WORK

- A. Section 03300 - Cast-in-Place Concrete

1.04 REFERENCES

- A. Standard for Electric Signs, UL-48, 13th Edition
- B. Standard for Control Centers for Changing Message Type Signs, UL-1433, 1st Edition
- C. Standard for CAN/CSA C22.2
- D. Federal Communications Commission Regulation Part 15
- E. National Electric Code

1.05 QUALITY ASSURANCE

- A. For outdoor use
- B. Source Limitations: Obtain each type of scoring or related equipment through one source from a single manufacturer.
- C. ETL listed to UL Standards 48 and 1433
- D. NEC compliant
- E. FCC compliant
- F. ETLC listed to CAN/CSA 22

1.06 WARRANTY

- A. Provide 5 years of parts coverage
- B. Provide toll-free service coordination
- C. Provide technical phone support

1.07 SUBMITTALS

A. Scoreboard

1. Product data: Submit manufacturer's product illustrations, data and literature that fully describe the scoreboards and accessories proposed for installation.
2. Shop drawings: Submit mechanical and electrical drawings.
3. Maintenance data: Submit manufacturer's installation, operation, and maintenance manuals.

1.08 PROJECT CONDITIONS

- A. Field measurements: Verify position and elevation of structure and its layout for scoreboard equipment. Verify existing dimensions of posts by field measurements.
- B. Installation may proceed within acceptable weather conditions.

1.09 DELIVERY STORAGE AND HANDLING

- A. All materials shall be protected from weather and other damage prior to installation.
- B. Scoreboard and equipment to be housed in a clean, dry environment.

PART 2 - MATERIALS

2.01 ELECTRONIC SCOREBOARD

Electronic Scoreboard shall be Daktronics Model BA-2618 (Local Representative: Scoreboard Enterprises, 274 Fruit Street, Mansfield, MA 02048 508-339-8113) or approved equal meeting the following requirements:

1. Board shall be a single-sided baseball scoreboard with scores for HOME and GUEST for each team inning up to 19 innings, BALL to three, STRIKE to two, OUT to two, and indicates H/E (hit or error).
 - a) Dimensions: 5'-0" (1524 mm) high, 10'-0" (3048 mm) wide, 0'-6" (152 mm) deep
 - b) Weight: 115 lb (52 kg) Power requirement: 150 W
 - c) Construction : Alcoa aluminum alloy 5052 construction
 - 1) Scoreboard back and perimeter: 0.050" thick
 - 2) Scoreboard face: 0.063" thick
 - d) Digits
 - 1) Seven bar segments per digit
 - 2) PanaView® digit technology
 - 3) Digit size: 18" (457 mm) high
 - 4) Red or amber in color

e) Captions

- 1) HOME, GUEST and INNING captions: 9" (229 mm) high
- 2) BALL, STRIKE, OUT, HIT and ERR captions: 6" (152 mm) high
- 3) All captions: white vinyl applied directly to scoreboard face

2.02 FOUL POLES (2)

- A. Foul poles shall be a pair of BBCFP-30, 30' Collegiate Foul Poles, as manufactured by Jaypro Inc., or approved equal.
- B. Pole shall be two piece telescoping pole.
- C. Base pole shall be 4-1/2" O.D. heavy walled steel tubing with 4.0" O.D. upper pole
- D. Wing panel shall be 18"W x 18"H bolt-on made of all steel expanded metal.
- E. Coating of wing and poles shall be a yellow powder coated finish over zinc undercoating.

2.03 BASKETBALL BACKBOARDS AND GOALS & REPAINTED STANDARDS

- A. Backboard shall be cast aluminum fan shaped backboard, regulation size (36" x 54"), finished with white powder coat. Backboard shall have a ten (10) year warranty, minimum.
- B. Basketball goals shall have regulation size (18" diameter) 5/8" diameter double rim of high tensile steel powder coated orange official size goal, with nylon net, and all required attaching hardware. Rim shall have 7/16" round steel braces, and 12 net-tie net holders.
- C. Hardware shall be zinc-galvanized.
- D. Paint for steel standards
 1. Primer shall be Moore Acrylic Metal Primer M04, Sherwin-Williams DTM Primer Finish B66W1, P&L Tech-Gard Acrylic Metal Primer, Z190, or equal acrylic rust-inhibitive primer.
 2. Finish paint shall be Moore Acrylic Gloss Enamel M28, Sherwin Williams DTM Acrylic Gloss Coating, B66 Series, P&L Accolade Exterior Gloss Enamel, Z4300 or equal exterior acrylic enamel.

PART 3 - INSTALLATION

3.01 SCOREBOARD

- A. Verify that mounting structure is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings.

3.02 INSTALLATION

A. Scoreboard

1. Install scoreboard on existing posts according to manufacturer's instructions.
 2. Install scoreboards and exterior displays to beams in location detailed and in accordance with manufacturer's instructions. Verify unit is plumb and level.
3. Connect new scoreboard to existing wiring and existing control center.
4. Check for proper operation of control unit, scoreboard and all features.
5. Verify earth ground does not exceed 15 ohms.

B. Foul Poles

1. Install according to manufacturer's instructions and as detailed on the Drawings.
2. Install pole with the wing panels on the fair side of the poles. Pole shall be installed plumb and in alignment as described by the manufacturer.
3. Refasten chain link fence fabric to post to provide complete closure of fencing.

C. Basketball Equipment

1. Painting of existing standards
 - a. Scrape all rust, dirt and debris from existing posts.
 - b. Prime bare metal with metal primer.
 - c. Apply two coats of finish paint
2. New Backboards and Goals
 - a. Install according to manufacturer's directions.
 - b. Install level and plumb.

END OF SECTION

SECTION 02900

PLANTING

PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.
- B. Examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 REQUIREMENTS INCLUDED

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to perform all planting work and related items as indicated on the Drawings and as specified.
- B. The work shall include, but is not limited to, the following:
 - 1. Planting trees, including provision of backfill mix..
 - 2. 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
 - 2. Section 02950 - Native grasses and lawns

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.
- 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.

1.06 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 shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years experience.

PART 2 - PRODUCTS

2.01 LOAM BORROW

- A. Loam borrow for planting backfill shall be as specified in Section 02950 - Native Grasses and Lawns.

2.02 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 the plants.
- 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.

2.03 GRADES AND STANDARDS OF PLANTS

- A. The Contractor shall furnish all plants shown on the Contract Documents, as specified, and in quantities listed on the Plant List. No substitutions will be permitted, without written approval by the Owner's Representative. All plants shall be nursery grown unless specifically authorized to be collected as noted on the Plant List.
- B. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. Only plant stock grown within Hardiness Zones 1 through 6b, as established by the USDA Plant Hardiness Zone Map, latest edition, will be accepted.
- C. Plants shall be in accordance with ASNI Standards of the American Association of Nurserymen except as noted in this Section - Planting. Botanical plant names shall be in accordance with plant designations included in Hortus III.
- D. All deciduous trees shall meet the following standards:
 - 1. Trees shall have a single, straight trunk, well formed, and sturdy. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety.
 - 2. All pruning wounds shall show vigorous bark on all edges at the time of harvest. Pruning scars within the crown of any tree shall be clean cut and shall leave no protrusion beyond the branch collar.
 - 3. Trees shall be free from signs of pest and disease damage. The trunk shall be free from sun scald, frost cracks, and wounds resulting from abrasions, fire, animal damage, or other causes.
 - 4. All trees shall have healthy, vigorous leaves or needles of normal size, color, shape, and texture for the particular species and variety.
 - 5. Unless otherwise indicated on the Plant List, the height and spread of deciduous shade trees shall be the minimum requirements.
 - 6. Take caliper measurements for deciduous trees 6 inches above ground level up to and including 4 inches caliper size and 12 inches above ground for larger sizes.

7. No deciduous tree shall be pruned after the Owner's Representative has tagged the plant in the nursery except as directed by the Owner's Representative.
8. Unless otherwise noted on the Plant List, the height to the first branch shall be not less than 6.5 from finish grade to comply with ADA requirements.

2.04 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.

2.05 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.

2.06 PLANTING BACKFILL MIX

- A. Planting soil mix shall be an approved loam borrow as specified in Section 02950 - Native Grasses and Lawns 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.

2.07 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.

2.08 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 digging of planting pits, furnishing the plants as specified as well as the labor of planting, fertilizing, mulching and maintenance.
- B. 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
- C. 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 the Drawings.
 - 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. 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 mulch to depths shown on the Drawings.

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.
- 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, ornamental grasses and perennials shall be guaranteed for one year from the date of Substantial Completion of the entire project.
- B. At the end of the guarantee period, a final inspection will be held to determine whether any replacements are required. Each plant shall be 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. Plants found to be unacceptable shall be removed promptly from the site

and replaced according to this Section. 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 02950

NATIVE GRASSES & LAWN GRASSES

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 SPECIAL CONDITIONS

- A. The work of this Section occurs within the Riverfront Area under the jurisdiction of the Waltham Conservation Commission. The Contractor is informed that the Order of Conditions by the Waltham Conservation Commission does not allow the use of fertilizers within the Riverfront Area.. Grasses shall be established and maintained without the use of fertilizer.

1.03 SCOPE OF WORK

- A. The purpose of this Work is to provide an established stand of perennials and grasses in the areas to be seeded. For the purpose of this Specification, the term “grasses” shall apply to all the forbs and grasses included in the materials.
- B. The work of this Section consists of seeding work and related items as indicated on the Drawings including but not limited to:
 - 1. Placement, compaction and preparation of loam for seeding
 - 2. Winter stabilization with annual ryegrass
 - 3. Seeding and mulching new lawn areas
 - 4. Repair of existing lawn areas disturbed by construction
 - 5. Maintenance and guarantee of grass areas

1.04 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 02900 - Planting

1.05 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.

1.06 SUBMITTALS

- A. Submit seed vendor's certification for grass seed mixtures, indicating percentage by weight, and percentages of purity, percent germination, PLS, and weed seed for each grass species.
- B. Submit the following material samples: Loam, 5 lb sample.
- C. Submit manufacturer's information for any soil additives.

1.07 QUALITY ASSURANCE

- A. All seeding shall be done by a firm having a minimum of five years experience with seeding. Prior to the beginning of the work, the Contractor shall submit the installers proof of qualifications to the Landscape Architect for approval.
- B. Provide seed mixture in containers showing percentages of seed mix, year of production, net weight, date of packaging, and location of packaging.
- C. Seed Analysis:
 - 1. Prior to the time of sowing of grass mixtures, certification from the supplier shall be submitted to the Landscape Architect for approval. The certification shall state the formula of the seed mixture.
- D. Loam Testing
 - 1. Testing of loam shall be paid for by the Contractor. Loam shall be tested at the Soil and Plant Tissue Testing Laboratory, University of Massachusetts at Amherst or other independent testing laboratory. Soil testing shall include the following:
 - 2. Routine soil analysis (pH, Buffer pH, Extractable Nutrients (P, K, Ca, Mg, Fe, Mn, Zn, Cu, B), Extractable Aluminum, Cation Exchange Capacity, Percent Base Saturation, Extractable and Estimated Total Lead)
 - 3. Determination of Percent of Soil Organic Matter by Loss on Ignition.
 - 4. Soluble Salts
 - 5. Soil texture to determine USA Textural Classification.

6. The Contractor shall furnish the testing agency the grass mixtures to be planted. Test reports shall contain specific recommendations for addition of soil additives based upon the soil test results and these grasses.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver seed mixes in original unopened containers, showing weight, analysis and name of manufacturer or supplier. Store in a manner to prevent wetting and deterioration.

1.09 COORDINATION

- A. Notify the Landscape Architect at least 7 working days prior to start of seeding operations.

PART 2 - PRODUCTS

2.01 LOAM BORROW

- A. Loam borrow shall be a fertile, friable natural “fine sandy loam” or a “sandy loam” determined by chemical analysis and based on the USDA classification system. Loam shall contain not less than 5% nor more than 20% organic matter.
- B. The acidity range of the topsoil shall be pH 5.8 to 7.0. Loam pH shall be further adjusted for grass establishment as recommended by the soils testing laboratory.
- C. Soluble salts shall not be higher than 75 parts per million.
- D. Loam shall not be delivered or worked in a frozen or muddy condition.

2.02 SEED

- A. Seed shall be fresh, clean, new crop seed mixture.

2.03 SEED MIXTURES

- A. Seed shall be mixed by an approved method and shall be composed of the following varieties mixed to the specified proportions by weight and tested to minimum percentages of purity and germination. Mixtures shall be Poa Annua, Bent Grass and noxious weed seed free. Weed seed content shall not exceed 0.1% by weight of seed mixture. Percent by Weight for Native Seed Mixture is Pure Live Seed (PLS).
- B. Possible sources of native grass seeds and forbs: Ernst Conservation Seeds, Meadville, PA; New England Wetland Plants, Amherst, MA.

Lawn Grass Seed Mixture

Seeding dates: May 1 to June 15; August 15 to October 15.

Seeding rate: 5 lbs/1000 s.f.

| Botanical Name | Common Name | % by weight | Germination Min. | Purity Min. |
|-----------------------|---------------------|--------------------|-------------------------|--------------------|
| Festuca rubra | Creeping Red Fescue | 80% | 80% | 97% |
| Poa pratensis | Kentucky Bluegrass | 20% | 80% | 85% |

Native Grass and Forb Seed Mix

Seeding dates: May 1 to June 15

Seeding rate: 5 lbs/1000 s.f.

| Botanical Name | Common Name | % by weight |
|-------------------------------------|---------------------|--------------------|
| Agrostis perennans | Upland Bent Grass | 5 % |
| Agrostis scabra | Rough Bentgrass | 5 % |
| Elymus canadensis | Canadian Rye | 10 % |
| Festuca rubra | Creeping Red Fescue | 35 % |
| Hordeum jubatum | | 5 % |
| Poa pratensis | Kentucky Bluegrass | 15 % |
| Schizachyrium scoparium "Camper" | Little Bluestem | 15 % |
| | Total grasses | 90% |
| Forbs | | |
| Asclepias tuberosa | Butterfly Milkweed | 2% |
| Aster novae-angliae | New England Aster | 2% |
| Oenothera biennis | Evening Primrose | 2% |
| Rudbeckia hirta | Black Eyed Susan | 2% |
| Solidago nemoralis | Gray Goldenrod | 2% |
| | Total Forbs | 10% |
| | Total | 100% |

Annual Ryegrass for dormant seeding

Seeding rate: 10 lbs/1000 sf

| Botanical Name | Common Name | % by weight | Germination Min. | Purity Min. |
|-----------------------|--------------------|--------------------|-------------------------|--------------------|
| Lolium multiflorum | Annual Ryegrass | 100% | 90% | 98% |

2.04 WATERING

- A. Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor at no extra cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured due to lack of water or the use of too much water shall be the Contractor's responsibility to correct.

2.05 FERTILIZER

- A. No fertilizer shall be applied.

2.06 MULCHING MATERIAL

- A. Seeded area shall be mulched with weed-free straw or salt marsh hay.

2.07 WOOD CELLULOSE FIBER FOR HYDROSEEDING

- A. Mulch for hydroseeding shall be wood fiber only.

PART 3 - EXECUTION

3.01 PLACING OF LOAM

- A. Soil preparation shall occur only when the soil is in a friable condition, not muddy or hard. Place topsoil only during dry weather and on dry unfrozen subgrade.
- B. Prior to spreading loam, verify that subgrade has been compacted to 85% maximum dry density as required under Section 02200 - Earthwork.
- C. Spread loam over areas to be seeded. Rake smooth and grade to eliminate rough, low or soft areas, and to ensure positive drainage.
- D. After raking smooth apply soil amendments to adjust pH if recommended by the soils analysis. Mix thoroughly to incorporate into the upper four (4) inches of loam.

- E. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.

3.02 COMPACTION OF LOAM

- A. Loam shall be rolled and compacted to between 85% and 88% of dry maximum density as determined by ASTM D-1156 or ASTM D-1557.
- B. Following the spreading of loam, equipment used on grass areas shall be restricted to turf care type equipment that will not compact the topsoil to a greater density than that specified. If topsoil appears to be compacted to densities greater than that specified, the Contractor will be required to have density tests performed at no additional cost to the Owner. Areas where over-compaction has occurred shall be roto-tilled and fine graded.
- C. Depth of loam after compaction shall be 6 inches

3.03 SEEDING

- A. Seeding shall occur only when the soil is in a friable condition, not muddy or hard. Do not seed when ground is wet or water is visible. The Contractor shall notify the Landscape Architect of the presence of high groundwater before proceeding with seeding.
- B. Bare soil shall be seeded within 3 days of excavation or placement. If loam is placed outside of the dates allowed for the grass mixes, then bare loam shall be dormant seeded with annual winter rye.
- C. Bare soils shall be raked to remove large still clods, lumps, brush, roots, stumps, litter and other foreign matter. All depressions caused by settlement or rolling shall be filled with additional loam or compost and the soil shall be re-graded and rolled until presenting a firm, smooth and even finish corresponding to the required grades. No tracking or rolling shall be done on wet soil.

3.04 HYDROSEEDING

- A. Hydroseeding is an acceptable method of seeding. Hydroseeding shall be per the Massachusetts Highway Department 1995 Standard Specifications for Highway and Bridges Section 765.65, and manufacturer's and seed supplier's directions.

3.05 BROADCAST SEEDING

- A. Seed may be broadcast using a cyclone or whirlwind seeder or by hand. If spread by hand, small or light-seeded species such as bluestem may be mixed with filler (sawdust, rice, kitty litter, or clean washed sand) to achieve an even distribution. Seed shall be applied in two directions, each perpendicular to one another. One-half the seeding rate shall be applied in each direction. Seed shall be

incorporated 1/8" to 1/4" deep by raking or dragging, cultipacking, or tracking with heavy machinery. Raked areas shall be rolled with a weighted roller to provide good seed to soil contact. Do not roll or track the seed if the soil is wet.

- B. Upon completion of broadcast seeding and packing, or within 24 hours, straw mulch or dry pelletized mulch shall be hand broadcast uniformly over the entire planting area. Straw mulch shall be free of weed seeds and shall be applied at a uniform rate of 1500 lbs/acre.

3.06 OVERSEEDING

- A. Overseeding shall include top-dressing and overseeding of failed areas of grass. This work shall be incidental to the satisfactory completion of seeding at no extra cost to the Owner.
- B. The Contractor shall topdress overseeded areas with 1/4 inch to 1/2 inch of loam.
- C. Application rates for overseeding shall be the same as the original rates.

3.07 ESTABLISHMENT

- A. Establishment shall begin immediately after any area is seeded and shall continue for a minimum of 60 days active growing period following the completion of all grass installation work, and until final acceptance of the project whichever period is longer. In the event that seeding operations are completed after October 1, Establishment shall continue into the following spring and reseeding shall take place as necessary at that time.
- B. The Contractor shall provide all labor and water required for establishment. The Contractor shall water all seeded areas as necessary during the Establishment period to ensure uniform soil moisture to a depth of 2 inches or greater. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Establishment shall include placement and resetting of protective barriers as required.
- C. Maintenance and monitoring shall begin concurrently with the Establishment period. Maintenance shall include all necessary watering, repair, and reseeding to ensure establishment of forbs and grasses. Maintenance shall also include monitoring for invasive species. Any invasive species shall be immediately removed. All plant remains, including roots and shots, shall be legally disposed of off-site.
 - 1. Maintenance shall include mowing of lawn grass areas to maintain a height of 2-1/2" to 3". Native grass mix shall not be mown.

3.08 INSPECTION AND ACCEPTANCE

- A. A satisfactory stand of grass is required for acceptance. Seeded areas shall have a uniform stand of grasses with at least 95% of permanent species. The grass areas shall be free of excessive weed or crabgrass infestation, and shall have no bare

spots greater than 6" in diameter, nor an excessive number of bare spots even if of smaller diameter.

- B. All areas and parts of areas which fail to show a uniform stand of grass as described above, for any reason whatsoever,

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1- GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including the Contract Form, General Provisions, General Conditions, Supplemental Conditions, and all Attachments to the General Provisions, and Division 1 - General Requirements, apply to the work of this Section.

1.02 SCOPE OF WORK

- A. Work under this Section shall include all labor, materials, services, equipment, transportation and accessories and the performance of all operations necessary to complete the work of this Section, as indicated on the Drawings and as specified.
- B. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes. The work shall include, but is not limited to, the following:
 - 1. Footings: Concrete for footings may be plain or fiber-reinforced.
 - 2. Bench slabs: Concrete for bench slabs shall be fiber reinforced.

1.03 RELATED WORK

- A. Section 02200 - Earthwork
- B. Section 02800 – Site Furnishings
- C. Section 02825 – Chain Link Fencing
- D. Section 02850 – Athletic Equipment

1.04 SUBMITTALS

- A. Submit concrete mix design

:

1.05 REFERENCE STANDARDS

- A. All work shall comply with the minimum standards of the latest editions of the following codes and specifications, subject to modifications and amendments outlined herein.
 - 1. American Concrete Institute (ACI): ACI 305 & 306 Hot Weather Concreting/ACI 306 Cold Weather Concreting.
 - 2. Standard Specifications: Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and Bridges, latest

edition, Construction and Materials Specifications for Concrete.

1.06 PROJECT CONDITIONS

- A. Establish and maintain required lines, surfaces, and elevations.
- B. Do not install concrete work over wet, saturated, muddy, or frozen subgrade.
- C. Do not install concrete when air temperature is below 40 degrees F.
- D. Calcium chloride, salt, or any other admixture to prevent concrete from freezing is prohibited.

PART 2 - PRODUCTS:

2.01 BASE COURSES

- A. Base material under footings shall be aggregate base as specified under Section 02200, Earthwork.

2.02 CONCRETE MIX

- A. Provide ASTM C94 ready-mixed concrete. Batch mixing at site is not acceptable. Use ACI 301 Method 1 or Method 2 to determine mix proportions.
- B. Concrete mix shall conform to the following City of Waltham standards with fiber reinforcement where required:
 - 1. 7% (\pm 1-1/2%) air-entrained cement concrete
 - 2. 4,000 psi at 28 days
 - 3. 3/4" maximum stone
 - 4. Polypropylene reinforcement fibers shall be added at the rate of 1.0 lb/cubic yard of concrete.
- C. Concrete slump shall be no less than 2" nor greater than 4" determined in accordance with ASTM C143.
- D. Concrete shall contain a water reducing agent to minimize the water cement ratio of the mix, at the specified slump.
- E. No calcium chloride or admixtures containing calcium chloride shall be added to the concrete. No admixtures other than those specified shall be used in the concrete without the specific written permission of the Landscape Architect.
- F. No concrete shall be placed by pumping methods.

2.03 CEMENT

- A. Cement shall be Portland Cement conforming to ASTM C150, Type II, Dark Color.

2.04 Concrete Reinforcement Fibers

- A. Provide polypropylene fibrillated fibers of multi-design ASTM C1116C/116M, Section 4.1.3 Type III.
 - 1. Fibers shall 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.

2.04 ADMIXTURES

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

2.05 WATER - Water shall conform to ASTM C94.

PART 3 – EXECUTION

3.01 FORMS

- A. Slabs shall be formed. Top 12” of bollard footings in pavement shall be formed.

3.02 GRADING

- A. Make any corrections necessary to base course material furnished and installed under SECTION 02200, Earthwork, to bring base material to the sections and elevations shown on the Contract Drawings.
- B. Existing subgrade material which will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to required line and grade and to replace unsuitable material shall be material conforming to Section 02200 Earthwork.

3.03 CONCRETE PLACEMENT

- A. Concrete shall be thoroughly spaded, and tamped, and vibrated to secure a solid homogenous mass, thoroughly worked around reinforcement and into corners of forms.

3.04 FINISH

- A. Exposed tops and bench slabs where exposed shall have a broom finish.

3.05 CLEAN-UP

- A. At the completion of the work of this section, all rubbish, debris, waste materials from, and about the site, including tools, scaffolds, apparatus and appliances used in connection with work under this Section shall be legally disposed of and the premises shall be left in a clean condition.

END OF SECTION

SECTION 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 install 12 parking signs
 - 2. Furnishing and installing one (2) bronze plaques with text.
 - 3. Alternate No. 2: Furnishing and installing one (1) exterior park identification sign with granite posts. Sign and sign posts shall both be furnished and installed by the sign vendor.
 - a. Exact wording of sign and plaque are subject to change, including name of park.
- 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 03300 - Cast-in-Place Concrete

1.04 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 silkscreen samples for Train Station Motifs and sign copy, for each material, color, and finish designated on the Drawings. Each sign shall have a different historic Railroad Station silkscreened image. Images to be selected by the Owner, and selected images will be provided to the Sign Fabricator.
 - 5. Full size representative plotted templates for designated lettering, for each style, size, color, and finish designated on the Drawings. Include character and word spacing.

1.05 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 of 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.

1.06 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: ASTT_v1 B 209, alloy 1100, 3003, or 5052.

B. VINYL MATERIALS

1. Applied Vinyl Graphics: Provide opaque nonreflective vinyl film, 0.0035 inch minimum thickness, with pressure sensitive adhesive backing, suitable for exterior applications. Color shall be as indicted.

C. PARKING SIGNS

1. Parking signs shall be .080" thick flat aluminum with Type II engineer grade reflective sheeting applied over the surface. Aluminum sheeting shall conform to ASTM B209, Alloy 6061-T6 or 5052-H38.
2. Parking sign supports shall be heavy duty high tensile steel 2 lbs/foot U-channels with baked green enamel finish, and pre-drilled holes for fastening.
3. All fastening hardware shall be galvanized.

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.

2.03 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 APR-943@, manufactured by Products Research and Chemical Corporation, Gloucester City, NJ 08030, or approved equal.

2.04 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 Aoil 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.

2.05 FINISHES

- A. Acrylic Polyurethane Finish: For surfaces indicated to be painted with acrylic polyurethane, provide 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. Silkscreen Inks: Shall be compatible with the finishes it will be applied to. Colors will be selected by the Owner and Landscape Architect.
 - 1. Maximum of three colors will be selected by Architect for use on Polyurethane Finish.
- C. 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 Arcitect.

2.06 Parking Sign Schedule: 12 TOTAL

| | |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type 1: Size 12 x 18 Total Number: 2 Background: Blue Lettering: White | Handicapped Parking Van Accessible Space Universal Access Symbol Special Plate Required Unauthorized Vehicles May Be Removed At the Owner's Expense |
| Type 2: Size 18 x 24 Total Number: 2 Background: Green Lettering: White Information on Sign: | No Parking Mon-Fri 7am – 3:30 pm TOW ZONE |
| Type 3: Size 18 x 24 Total Number: 2 Background: Green Lettering: White Information on Sign: | City of Waltham Parks & Recreation Dept. Parking Restricted for Park Use Only 3 Hr Limit |
| Type 4: Size 12 x 18 Total Number: 1 Information on Sign: | City of Waltham Parks & Recreation Department Parking Regulations Parking is for those using the Recreation Facilities At the Park Parking is Restricted For Park Use Only 3 Hr Parking Restriction No Overnight Parking Police Take Notice |
| Type 5: Size 12 x 18 Total Number: 5 Information on Sign: | No Parking Violators Will be Towed At Vehicle Owners Expense Tow Graphic Per Order of the City of Waltham |

2.03 BRONZE PLAQUE

- A. Provide bronze casting, copper alloy UNS C83600, complying with the requirements of ASTM B584.
 - 1. Casting shall be free from pits, scale, sand holes, or other defects. Comply

with the requirements specified for metal, border style, background, texture, and finish and with requirements shown for finish, size, shape, and copy.

2. Border style: Single Line
3. Background Texture:
4. Background Finish: Baked Enamel Dark Brown
5. Font Finish: Satin Polished
6. Font: Helvetica Bold
7. Provide Clear Organic Coating for all surfaces: Air-dried acrylic coating equal to Inralac as developed by International Copper Research Corporation, 1.0-mil minimum dry thickness.

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. Fit exposed connections accurately together to form hairline joints, except where invisible joints are indicated. Shop weld connections.
- F. 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 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.

3.03 SIGN INSTALLATION

- A. General Installation Requirements: Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this section.
- B. Installation: Install units plumb, level, in alignment and plane without warp or rack. Anchor securely in place.
- C. Install parking signs on breakaway post as detailed in the Drawings.

3.02 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.

3.03 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.

3.04 ADJUSTING, CLEANING, TOUCH-UP. AND PROTECTION

- A. Clean exposed surfaces using manufacturer's printed instructions recommending materials and methods to be used. Remove and replace work which cannot be successfully cleaned.
- B. Touch-up damaged coatings and finishes. Eliminate visible evidence of repair.
- C. Provide temporary protection during the course of work, and immediately after completion to ensure work is not damaged or deteriorated in any way at time of final acceptance. Remove temporary protections and reclean as necessary immediately prior to final acceptance.

END OF SECTION

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 _____

**WEEKLY PAYROLL RECORDS REPORT
& STATEMENT OF COMPLIANCE**

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided, A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract. In addition, every contractor and subcontractor is required to submit, on a weekly basis, a copy of his or her weekly payroll records to the awarding authority. For every week in which an apprentice is employed, a photocopy of the apprentice's identification card must be attached to the payroll report. Once collected, the awarding authority is also required to preserve those reports for three years. In addition, each such contractor, subcontractor, or public body shall furnish to the awarding authority directly, within fifteen days after completion of its portion of the work, a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

_____, 201__

I _____, _____
(Name of signatory party) (Title)

I do hereby state that I pay or supervise the payment of the persons employed by
_____ On the _____
(Contractor, subcontractor or public body) (Building or project)

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

Signature _____, Title _____

Print _____, 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.

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.

PROOF OF CONTRACTOR'S RESPONSIBILITY

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

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

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 been successfully 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

Construction Documents

Waltham Parks Improvements Project

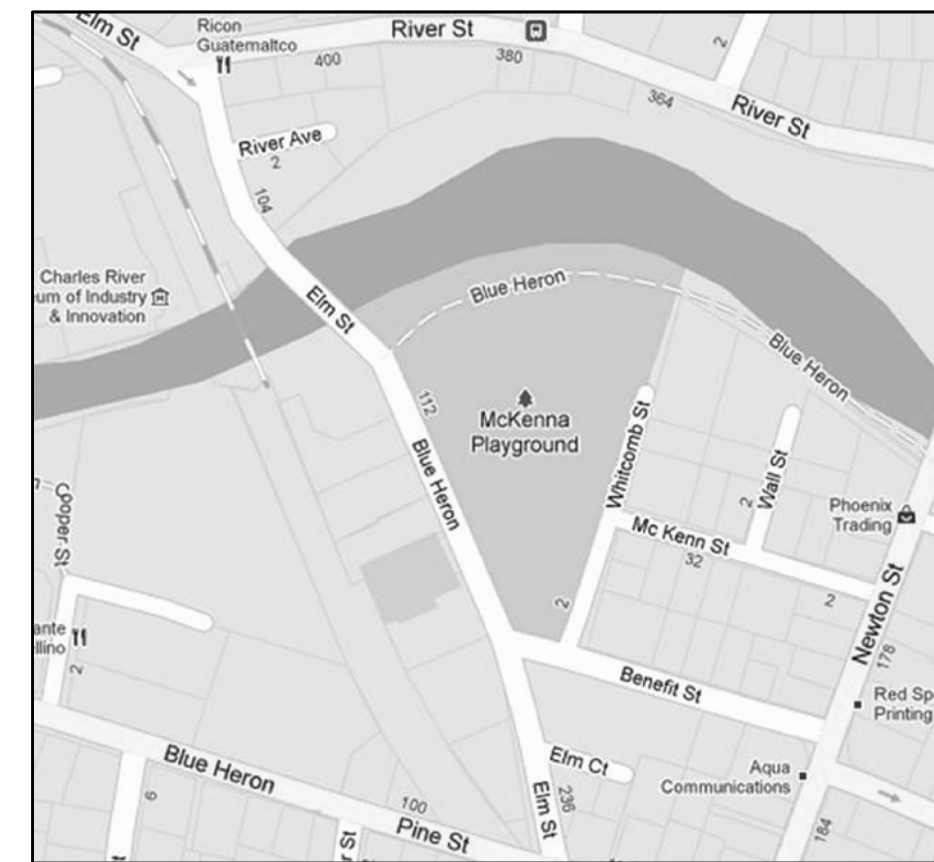
IMPROVEMENTS TO MCKENNA PLAYGROUND AND PROSPECT TERRACE

WALTHAM, MASSACHUSETTS 02453

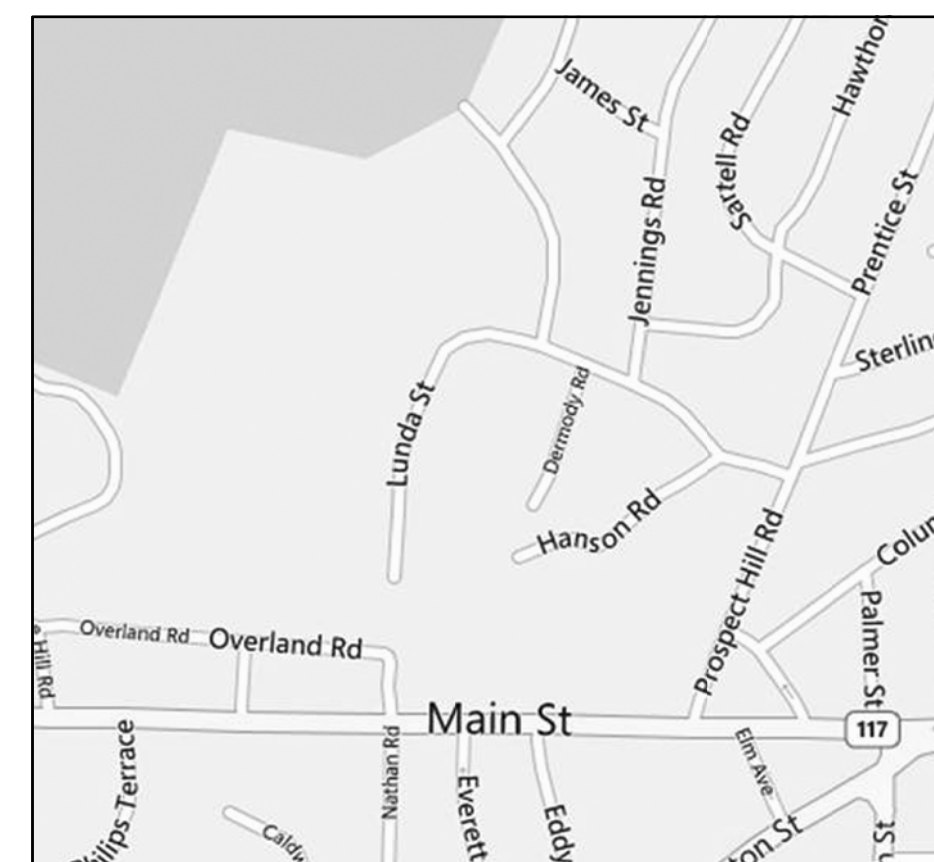
Locus Plan

PROJECT SITES

MCKENNA PLAYGROUND



PROSPECT TERRACE



MAYOR JEANNETTE A. McCARTHY
CITY OF WALTHAM

WALTHAM PLANNING DEPARTMENT
PARKS AND RECREATION DEPARTMENT

September 17, 2012

LANDSCAPE ARCHITECT:
CAROLYN COONEY and ASSOCIATES

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

ENGINEER:
SITE ENGINEERING CONSULTANTS, INC.

55 GRAPE SHOT ROAD
SHARON, MASSACHUSETTS 02067
TEL: (508) 784-0326 FAX: (508) 784-0429

SURVEYORS:

ALPHA SURVEYING AND ENGINEERING, INC.
695 WAREHAM STREET, MIDDLEBORO, MA 02346
TEL: (508) 295-5505 FAX: (508) 295-5535

FUNDED BY:

UNITED STATES DEPARTMENT OF
HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK
GRANT FUND

Index of Drawings

MCKENNA PLAYGROUND

- 1 OF 1 TOPOGRAPHIC SURVEY 2008
- 1 OF 1 EXISTING CONDITIONS SURVEY 2012
- T-1 TRAFFIC MANAGEMENT PLAN
- L-1 EXISTING CONDITIONS COMPOSITE
- L-2 SITE PREPARATION & DEMOLITION PLAN
- L-3 MATERIALS PLAN
- L-4 LAYOUT PLAN
- L-5 GRADING & DRAINAGE PLAN
- L-6 PLANTING PLAN
- L-7 DETAILS
- L-8 DETAILS
- L-9 DETAILS
- L-10 DETAILS
- L-11 DETAILS
- L-12 DETAILS
- L-13 DETAILS

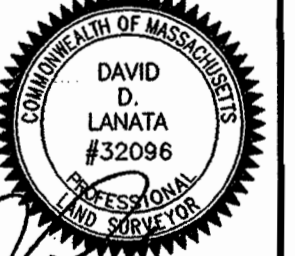
PROSPECT TERRACE

- 1 OF 1 EXISTING CONDITIONS PLAN
- L-14 SITE PREPARATION & DEMOLITION PLAN
- L-15 LAYOUT, MATERIALS & GRADING PLAN
- L-16 DETAILS
- L-17 DETAILS

- NOTES
1. THE ELEVATIONS AS SHOWN HEREON ARE BASED UPON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929) AND WERE DETERMINED BY BENCHMARKS PROVIDED BY THE CITY OF WALTHAM ENGINEERING DEPARTMENT. SEE PLAN FOR PROJECT BENCHMARK LOCATIONS.
 2. UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED UPON INFORMATION OF RECORD ONLY. NO ATTEMPT WAS MADE AS A PART OF THIS SURVEY TO LOCATE AND/OR SHOW ANY SUB-SURFACE STRUCTURES OR UTILITIES EXCEPT TO SAID PARCEL. THE LOCATIONS OF SUB-SURFACE STRUCTURES AND UTILITIES SHOULD BE VERIFIED THROUGH THE APPROPRIATE AGENCY AND THE DIG-SAFE CALL CENTER SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION.
 3. CONTOURS ARE BASED ON HALF-FOOT AND ONE-FOOT LINES.
 4. THE LOCATION OF THE PROPERTY LINE IS APPROXIMATE ONLY.
 5. THIS PLAN IS THE RESULT OF AN INSTRUMENT SURVEY PERFORMED IN FEBRUARY 2007.
 6. THE SUBJECT PROPERTY, SHOWN HEREON IS DEPICTED ON CITY OF WALTHAM ASSESSORS' PROPERTY ID: ROAD 032 0010, ADDRESS: 10 WHITCOMB ST., OWNER: CITY OF WALTHAM.
 7. THE SUBJECT PARCELS LIE WITHIN AREA "C", AREA OF ANNUAL FLOODING AS SHOWN ON F.L.R.A. COMMUNITY PANEL #250222 0004 B, DATED DECEMBER 18, 1979.

TOPOGRAPHIC PLAN
McKENNA PLAYGROUND
WALTHAM, MASSACHUSETTS

DATE: Aug. 21, 2007

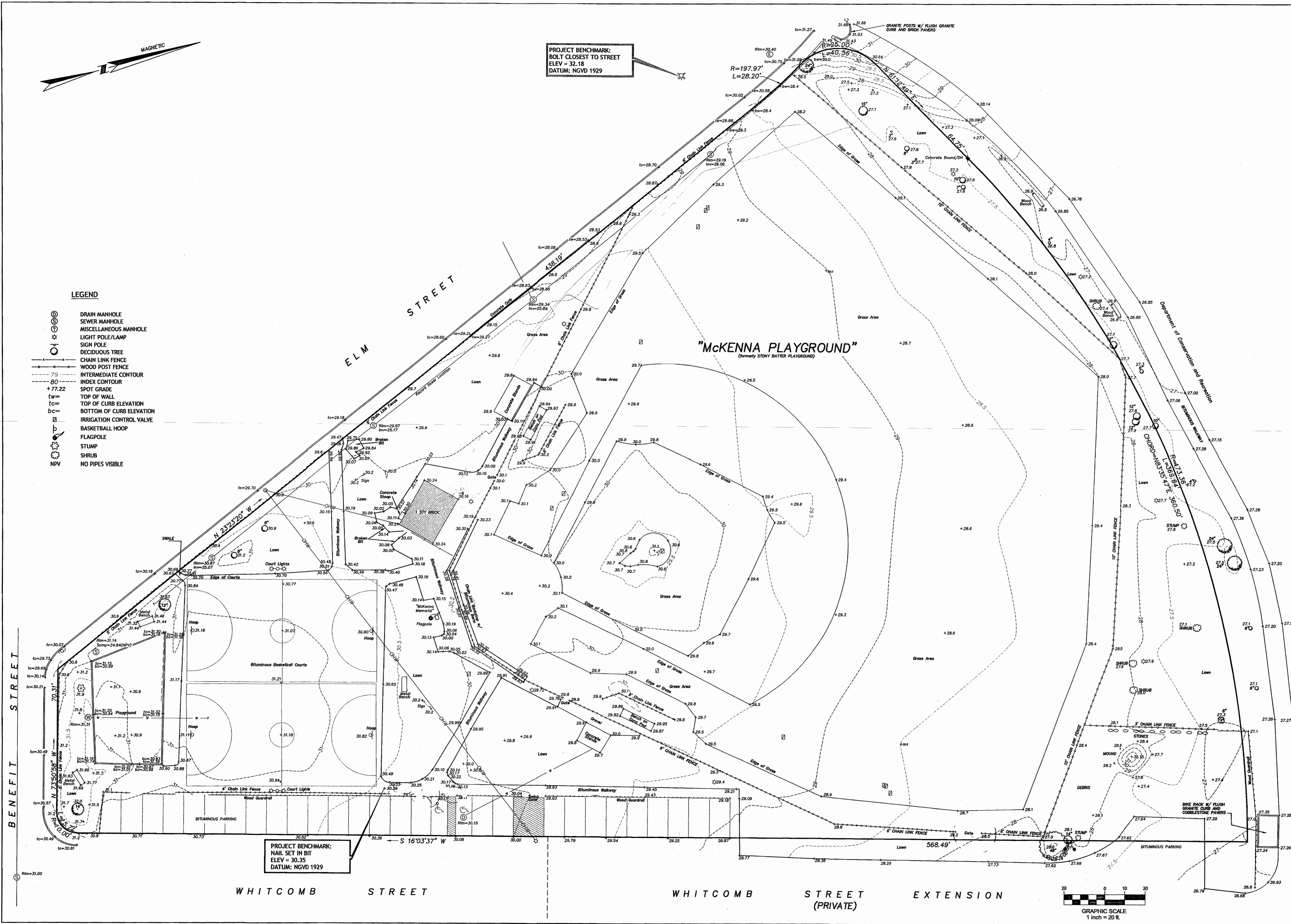


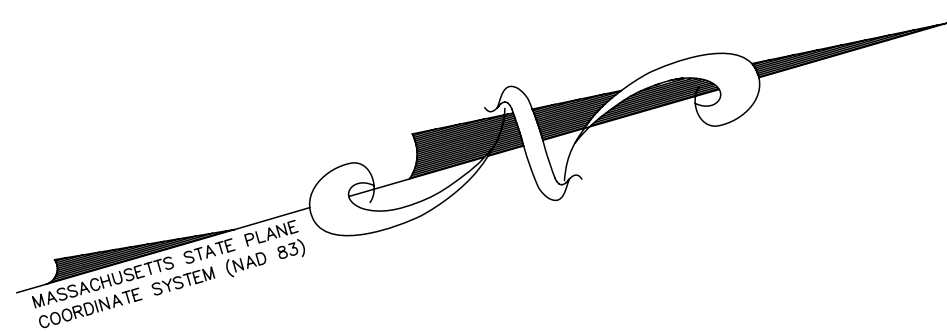
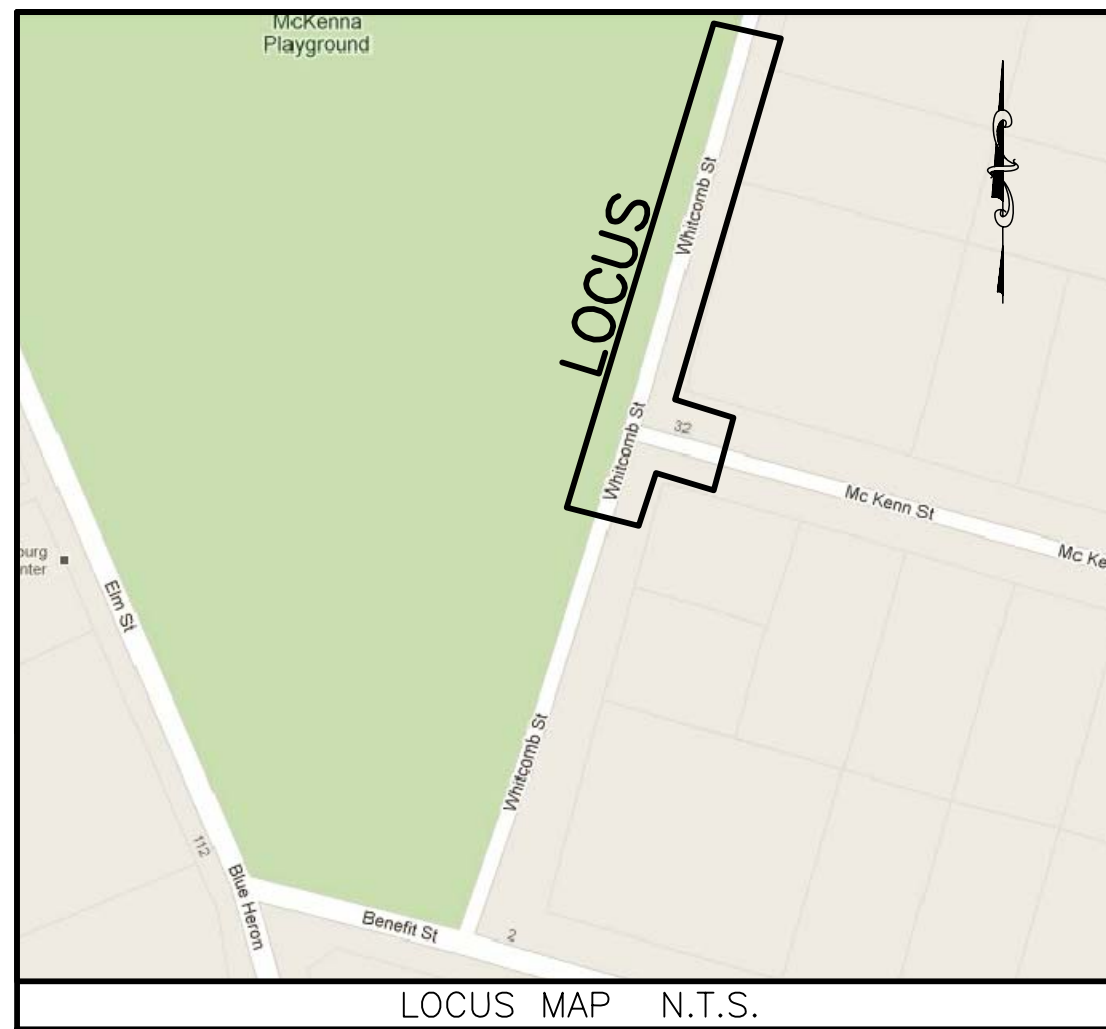
DAVID D. LANATA - P.L.S. No. 32096

| REVISION | DATE | BY |
|----------|------|----|
| | | |
| | | |
| | | |
| | | |

JOB # 27002.00
DATE: AUGUST 21, 2007
SCALE: 1"=20'
DRAWN BY: RDN
APPROVED BY: DDL
FILE: 27002_ECP4.DWG

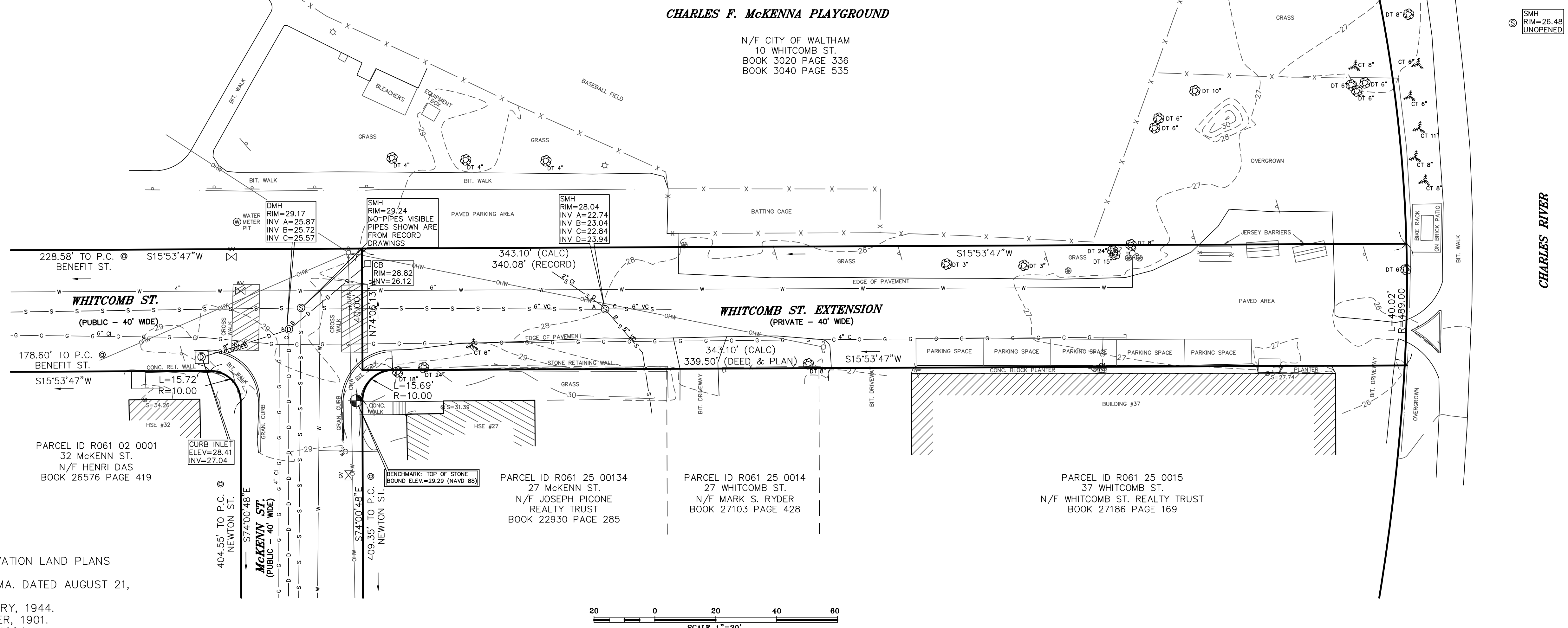
TP1





LEGEND

| | |
|----------------------|--------|
| CONIFEROUS TREE: | CT 6" |
| DECIDUOUS TREE: | DT 6" |
| GAS GATE: | Symbol |
| GAS METER: | Symbol |
| FIRE HYDRANT: | Symbol |
| SIGN POST: | Symbol |
| LIGHT POLE: | Symbol |
| WATER GATE: | Symbol |
| WATER MANHOLE: | Symbol |
| SEWER MANHOLE: | Symbol |
| DRAIN MANHOLE: | Symbol |
| CATCH BASIN: | Symbol |
| BOLLARD: | Symbol |
| WATER LINE: | Symbol |
| GAS LINE: | Symbol |
| SANITARY SEWER LINE: | Symbol |
| STORM DRAIN LINE: | Symbol |
| FENCE: | Symbol |
| GUARDRAIL: | Symbol |
| BITUMINOUS: | BIT. |
| CONCRETE: | CONC. |
| DOOR SILL: | Symbol |



- PLAN REFERENCES:**
1. PLAN BOOK 140 PAGE 50
 2. PLAN BOOK 141 PAGE 48
 3. PLAN No. 1413 OF 1948 (DEED BOOK 7348 PAGE 229.
 4. METROPOLITAN PARK COMMISSION CHARLES RIVER RESERVATION LAND PLANS FARWELL ST. TO MOODY ST., WALTHAM, MA.
 5. TOPOGRAPHIC PLAN, MCKENNA PLAYGROUND, WALTHAM, MA. DATED AUGUST 21, 2007 PREPARED BY SAMIOTES CONSULTANTS, INC.
 6. PLAN AND PROFILE OF WHITCOMB STREET DATED FEBRUARY, 1944.
 7. PLAN AND PROFILE OF MCKENN STREET DATED SEPTEMBER, 1901.
 8. PLAN AND PROFILE OF BENEFIT STREET DATED AUGUST, 1904.
 9. PLAN AND PROFILE OF ELM STREET DATED NOVEMBER, 1896. (2 SHEETS)

UTILITY NOTE:

ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. BEFORE DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACK FILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC & PRIVATE, MUST BE NOTIFIED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS. ALPHA LS ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE FUTURE CONNECTIONS, THE APPROPRIATE UTILITY ENGINEERING DEPARTMENTS MUST BE CONSULTED. CALL "DIG SAFE" AT 1-888-DIG SAFE.

NOTES:

1. THE BEARINGS AND DISTANCES AND THE COORDINATES THEY ARE BASED ON SHOWN ON THIS PLAN ARE IN U.S. SURVEY FEET IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, CORS ADJUSTMENT (NAD83/CORS) AS DETERMINED BY GPS OBSERVATIONS MADE BETWEEN THE DATES OF FEB. 22 AND FEB. 23, 2012 USING THE MTS WOBURN CORS SYSTEM.
2. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON ELEVATION DATA SHOWN ON PLAN REF. No. 5 AND CONVERTED TO NAVD 88 USING CORPSCON.

I CERTIFY THE LOCATIONS AND ELEVATIONS SHOWN ON THIS PLAN RESULT FROM AN ACTUAL SURVEY MADE ON THE GROUND ON THE DATE OF FEB. 23, 2012.

REGISTERED PROFESSIONAL LAND SURVEYOR DATE
 FOR ALPHA SURVEYING & ENGINEERING, INC.

PREPARED FOR
 CAROLYN COONEY &
 ASSOCIATES
 13 ELM ST
 MILFORD, MA 01757

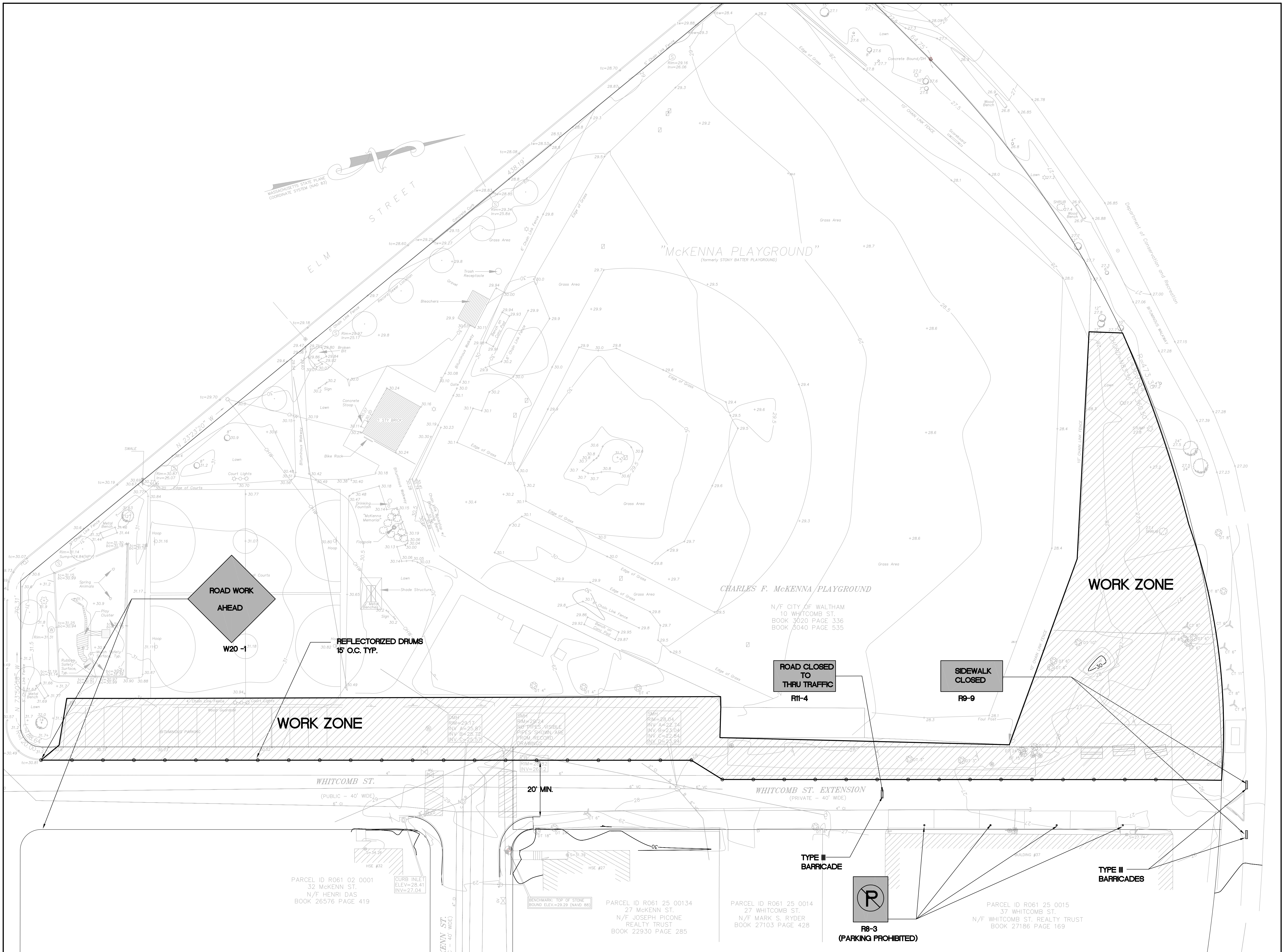
SCALE: 1"=20'
 DATE: 3/14/2012
 DRAWN: AMC
 CHECKED: JEP

**EXISTING CONDITIONS PLAN
 MCKENNA PLAYGROUND, WHITCOMB ST. EXTENSION
 WALTHAM, MASSACHUSETTS**

ALPHA SURVEYING AND ENGINEERING INC.
 695 WAREHAM STREET
 MIDDLEBOROUGH, MASSACHUSETTS 02346
 (508) 295-5505

ALPHA SURVEYING AND ENGINEERING INC.

JOB NO. 12102
 SHEET NO. 1 of 1
 DWG. NO. 12102



Carolyn Cooney & Associates

Landscape Architecture / Planning
 19 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

J. Michael Garvin, P.E.
 J. Michael Garvin, P.E.
 City of Waltham Traffic Engineer

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

REVISIONS



Project:
WALTHAM PARK IMPROVEMENTS PROJECT

MCKENNA PLAYGROUND

Prepared For:

WALTHAM PLANNING DEPARTMENT
 119 SCHOOL STREET
 WALTHAM, MA 02451

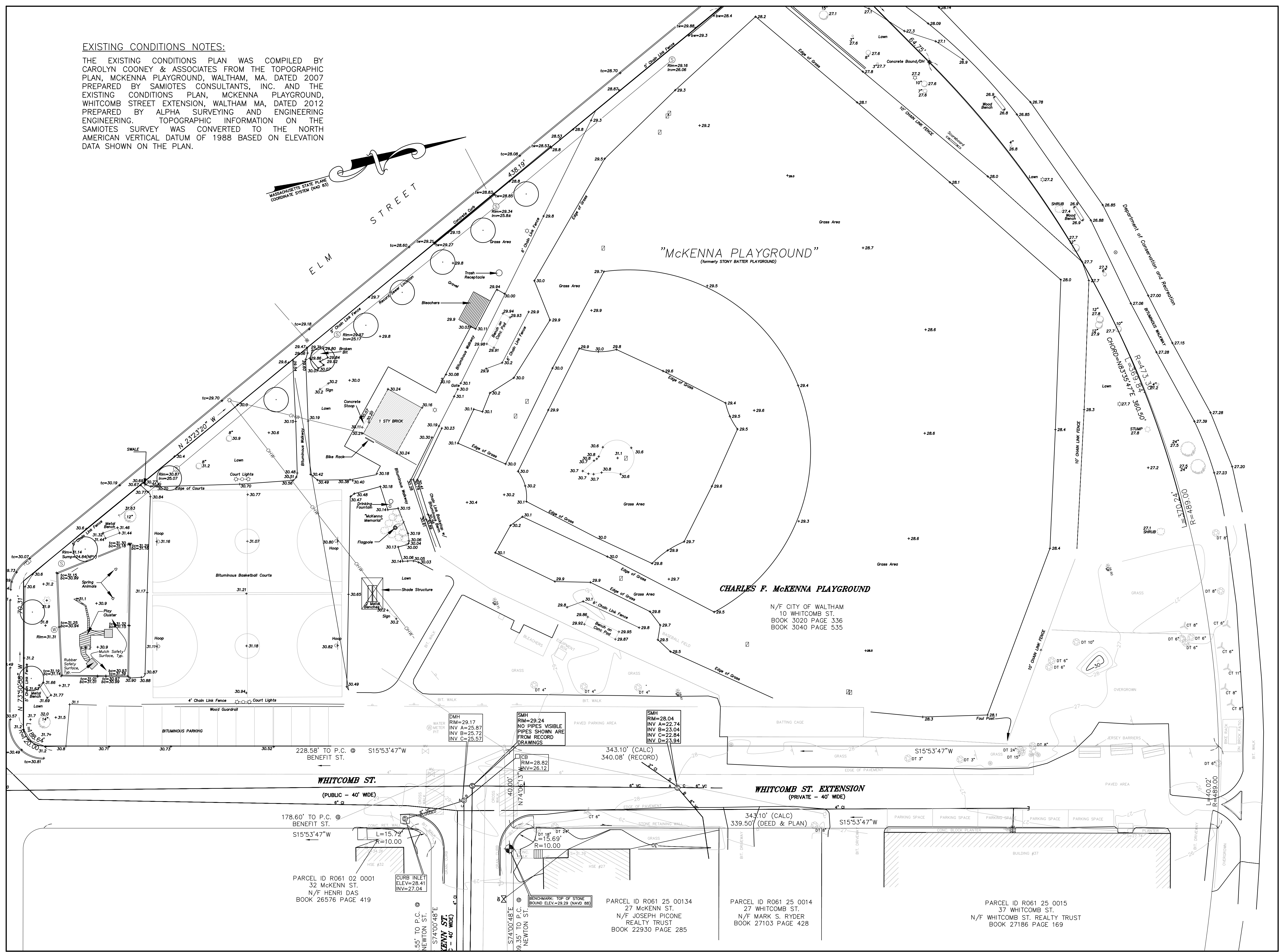
TITLE:
TRAFFIC MANAGEMENT PLAN

Scale 1" = 20' Date SEPT 17, 2012
 Drawn By CCC
 Checked By MG
 Approved By MG
 Project No. 1201.00

DWG No. **T-1**

EXISTING CONDITIONS NOTES:

THE EXISTING CONDITIONS PLAN WAS COMPILED BY CAROLYN COONEY & ASSOCIATES FROM THE TOPOGRAPHIC PLAN, MCKENNA PLAYGROUND, WALTHAM, MA, DATED 2007 PREPARED BY SAMIOTES CONSULTANTS, INC. AND THE EXISTING CONDITIONS PLAN, MCKENNA PLAYGROUND, WHITCOMB STREET EXTENSION, WALTHAM MA, DATED 2012 PREPARED BY ALPHA SURVEYING AND ENGINEERING ENGINEERING. TOPOGRAPHIC INFORMATION ON THE SAMIOTES SURVEY WAS CONVERTED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 BASED ON ELEVATION DATA SHOWN ON THE PLAN.



Carolyn Cooney & Associates
 Landscape Architecture / Planning
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 CONSULTING CIVIL ENGINEERS

alpha
 SURVEYING and ENGINEERING INC.
ALPHA SURVEYING AND ENGINEERING INC.
 695 WAREHAM STREET
 MIDDLEBOROUGH, MASSACHUSETTS 02346
 (508) 295-5505

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

REVISIONS



Project:
WALTHAM PARK IMPROVEMENTS PROJECT

MCKENNA PLAYGROUND

Prepared For:
**WALTHAM PLANNING DEPARTMENT
 119 SCHOOL STREET
 WALTHAM, MA 02451**

TITLE:
EXISTING CONDITIONS PLAN

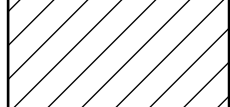
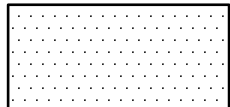
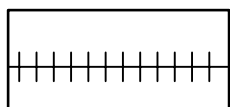
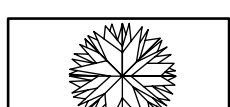
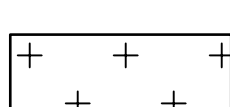
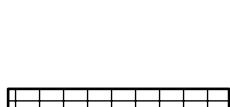
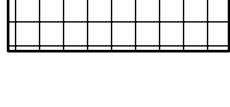
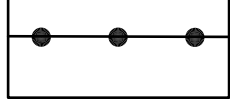

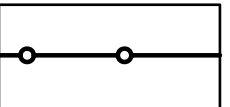
Scale 1" = 20' Date SEPT 17, 2012
 Drawn By CCC
 Checked By
 Approved By
 Project No. 1201.00

DWG No. **L-1**

DEMOLITION NOTES:

1. SAW CUT ALL BITUMINOUS PAVING AT THE LIMIT OF DEMOLITION.
2. UTILITY LOCATIONS HAVE BEEN TAKEN FROM EXISTING CONDITIONS DRAWINGS AS AVAILABLE. LOCATION AND DEPTH OF UTILITIES ARE APPROXIMATE. NO GUARANTEE IS EXPRESSED OR IMPLIED THAT UTILITY LINES ARE AT THE LOCATIONS OR DEPTH SHOWN, OR THAT THE DRAWINGS INDICATE ALL UTILITIES WHICH MAY EXIST. PRIOR TO EXCAVATION, CONTACT: (1) MARK UTILITY LOCATIONS AND CALL "DIG SAFE" (811) 72 HOURS PRIOR TO WORK, AND (2) CONTACT THE CITY ENGINEERING DEPARTMENT FOR SITE INFORMATION. CONTRACTOR SHALL PROVIDE "DIG SAFE" NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED BOTH ON AND OFF PROJECT SITE.
3. DEMOLITION SHALL INCLUDE REMOVAL OF ALL EXISTING FEATURES NECESSARY FOR THE CONSTRUCTION OF NEW WORK. NO GUARANTEE IS MADE THAT THESE DEMOLITION PLANS DESCRIBE ALL THE MATERIALS, LIMITS, EXTENT, QUANTITY OR DEPTH OF MATERIAL WHICH MUST BE REMOVED OR PROTECTED.
4. 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.
5. THE WORK OF THIS CONTRACT LIES WITHIN THE REVERFRONT RESOURCE AREA UNDER THE JURISDICTION OF THE WALTHAM CONSERVATION COMMISSION. THE PROJECT WORK IS SUBJECT TO AN ORDER OF CONDITIONS. SEE SPEC SECTION 01571 AND APPENDIX A, ORDER OF CONDITIONS.
6. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL SURVEYOR TO MARK THE CITY PROPERTY LINE ALONG WHITCOMB STREET PRIOR TO BEGINNING WORK ON THIS PROJECT. REFER TO SPEC SECTION 01050 - FIELD ENGINEERING.
7. TRANSPORT JERSEY BARRIERS TO A LOCATION WITHIN THE CITY OF WALTHAM, AS DIRECTED BY THE CITY'S REPRESENTATIVE.
8. PRIOR TO BEGINNING CONSTRUCTION, PROVIDE EROSION CONTROLS, PROJECT SIGN AND DEP WETLANDS FILE NO. SIGN AS REQUIRED BY THE ORDER OF CONDITIONS.
9. EXISTING BASE COURSE AT PARKING LOT MAY BE REUSED. REFER TO SPEC SECTION 02200 - EARTHWORK. PROVIDE ADDITIONAL BASE AS REQUIRED TO EXECUTE THE GRADING PLAN.
10. IT SHALL BE THE CONTRACTOR'S OPTION TO PULVERIZE BITUMINOUS CONCRETE SCHEDULED FOR REMOVAL AND TO USE PULVERIZED BITUMINOUS CONCRETE FOR BASECOURSE. EXCESS PULVERIZED BITUMINOUS CONCRETE SHALL BE REMOVED AND DISPOSED OF.

LEGEND

-  R & D BITUMINOUS CONCRETE
-  CLEAR AND GRUB ALL VEGETATION, REMOVE ALL RUBBLE, REMOVE LOAM & DISPOSE OF OFFSITE
-  STRAW WATTLE
-  EXISTING TREES TO REMAIN & BE PROTECTED - SEE TREE PROTECTION DETAIL
-  STRIP SOD AND TOPSOIL. EXCAVATE TO DEPTH REQUIRED FOR PAVING & GRAVEL INFILTRATION TRENCHES.
-  STRIP SOD ONLY. TOPSOIL TO REMAIN FOR SEEDING OF GRASSES
-  EX. 4' HT CLF, R & D
-  EXISTING GUARDRAIL, R & D
-  CONTRACT LIMIT LINE
-  PROVIDE TEMPORARY CHAIN LINK FENCE

ADD ALTERNATE NO. 1
R & D FOUL POLE POST AND FOOTING. REMOVE & REPLACE EXISTING FENCE FABRIC AS NECESSARY TO INSTALL NEW POLE.

ADD ALTERNATE NO. 1
REMOVE AND SALVAGE EXISTING SCOREBOARD, POSTS TO REMAIN AND BE PROTECTED. DELIVER SALVAGED SCOREBOARD TO CITY.

ADD ALTERNATE NO. 2
R & D EXISTING FLAGPOLE & FOOTING

ADD ALTERNATE NO. 2
R&D PARK SIGN - SALVAGE GRANITE POSTS AND TRANSPORT TO CITY STORAGE LOCATION

ADD ALTERNATE NO. 1
R & D FOUL POLE AND FOOTING. REMOVE & REPLACE EXISTING FENCE FABRIC AS NECESSARY TO INSTALL NEW POLE.

R & D EXISTING METAL GATE AND GATEPOSTS

R & D BIT. CONC WALKWAY

R & D EXISTING METAL GATE

STRIP SOD AND TOPSOIL AND EXCAVATE TO DEPTH REQUIRED FOR NEW PAVING

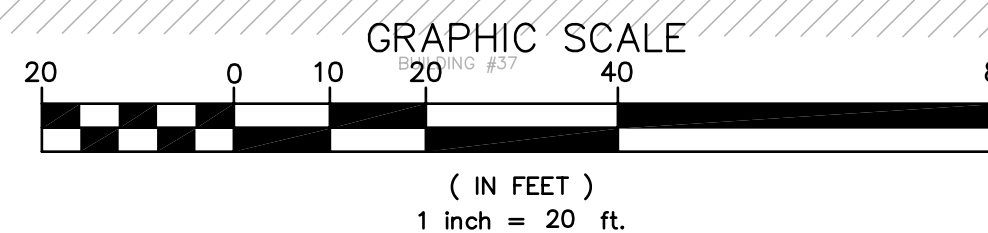
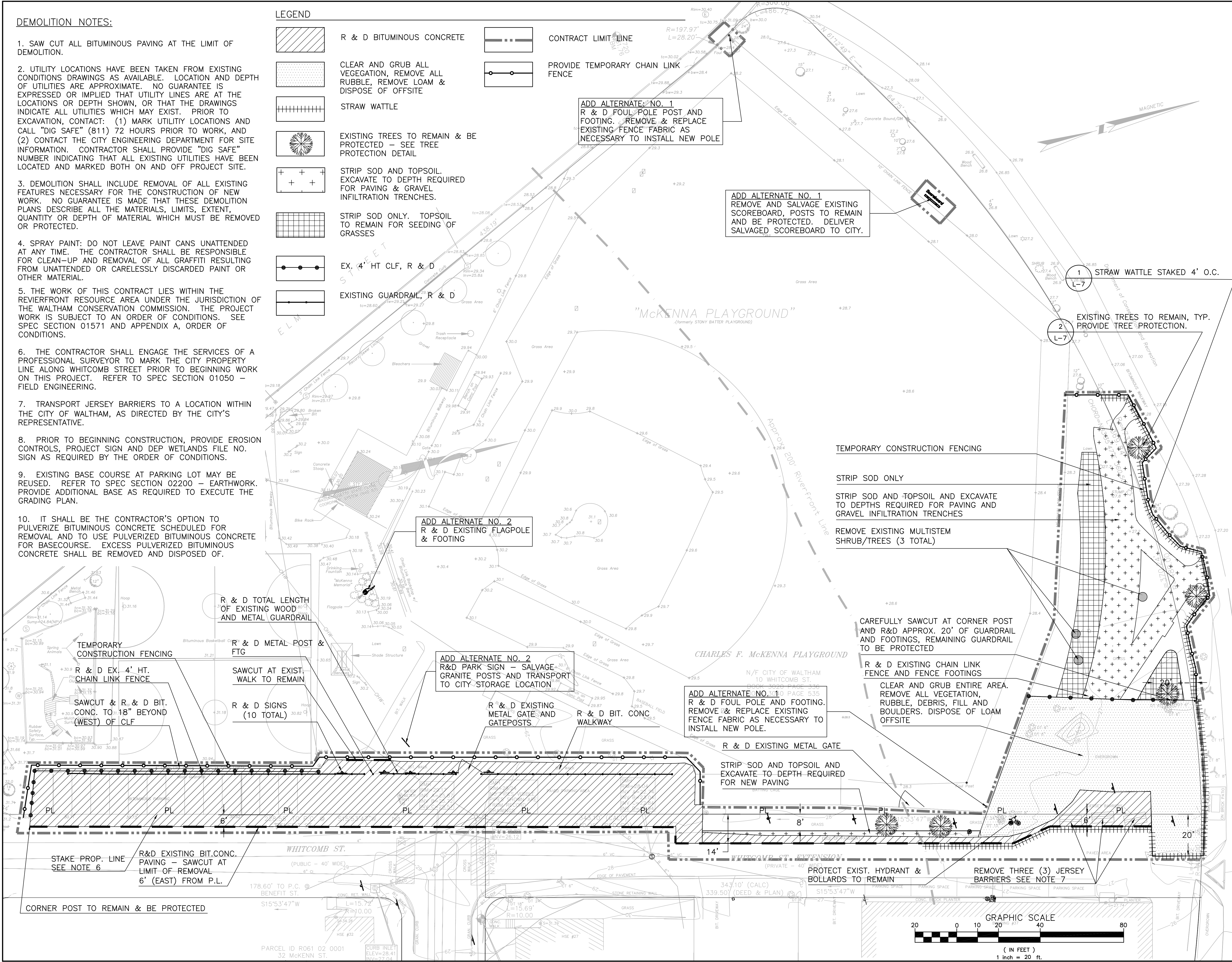
CAREFULLY SAWCUT AT CORNER POST AND R&D APPROX. 20' OF GUARDRAIL AND FOOTINGS, REMAINING GUARDRAIL TO BE PROTECTED

R & D EXISTING CHAIN LINK FENCE AND FENCE FOOTINGS

CLEAR AND GRUB ENTIRE AREA. REMOVE ALL VEGETATION, RUBBLE, DEBRIS, FILL AND BOULDERS. DISPOSE OF LOAM OFFSITE

PROTECT EXIST. HYDRANT & BOLLARDS TO REMAIN

REMOVE THREE (3) JERSEY BARRIERS SEE NOTE 7



Carolyn Cooney & Associates

Landscape Architecture / Planning

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ALPHA SURVEYING AND ENGINEERING INC.

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

| No. | Description | Date |
|-----------|-------------|------|
| REVISIONS | | |



Project:
WALTHAM PARK IMPROVEMENTS PROJECT

MCKENNA PLAYGROUND

Prepared For:

**WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451**

TITLE:
DEMOLITION & SITE PREPARATION PLAN

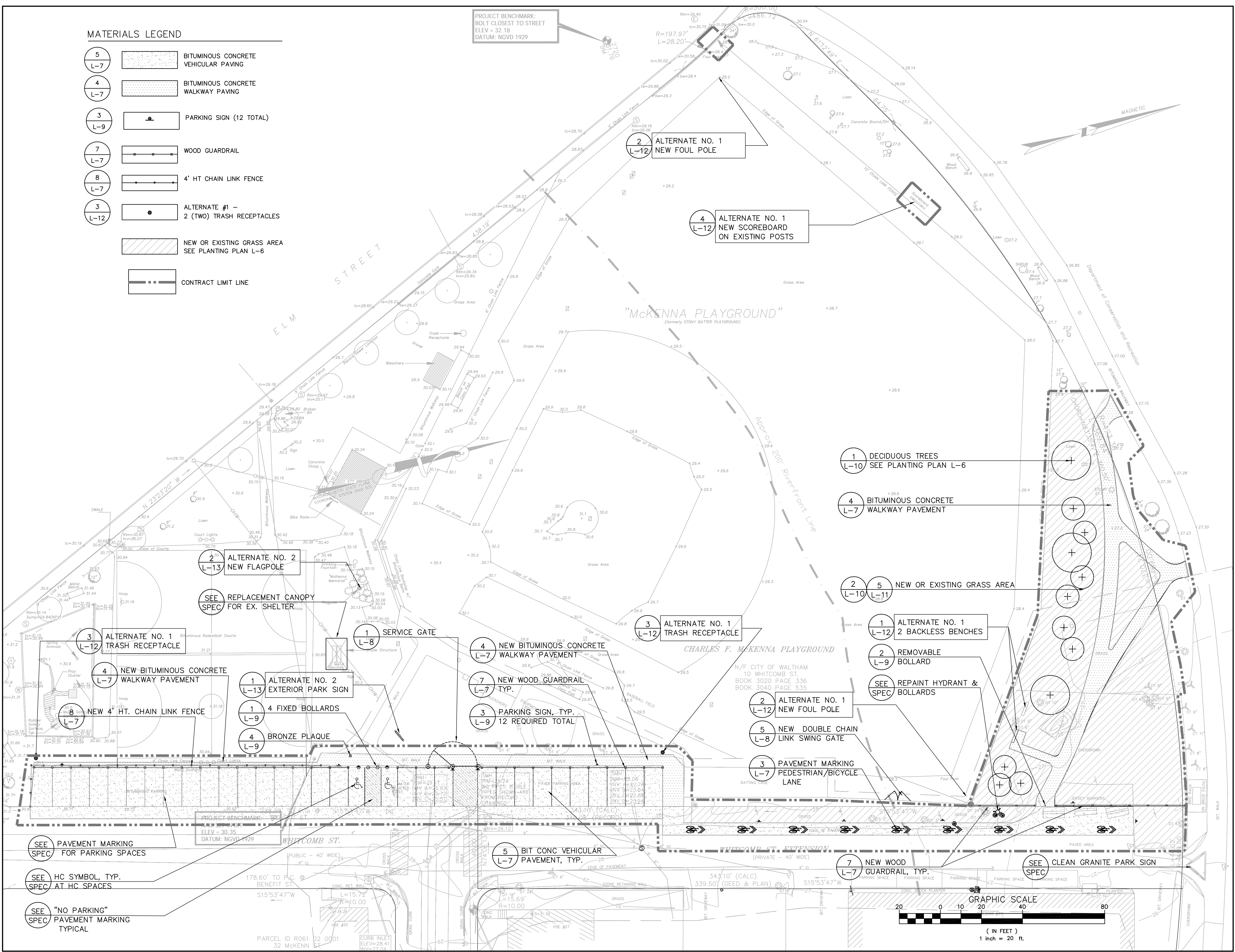
Scale 1"=20' Date SEPT 17, 2012
Drawn By CCC
Checked By DRB
Approved By CCC
Project No. 1201.00

DWG No. **L-2**

MATERIALS LEGEND

- 5
L-7 BITUMINOUS CONCRETE
VEHICULAR PAVING
- 4
L-7 BITUMINOUS CONCRETE
WALKWAY PAVING
- 3
L-9 PARKING SIGN (12 TOTAL)
- 7
L-7 WOOD GUARDRAIL
- 8
L-7 4' HT CHAIN LINK FENCE
- 3
L-12 ALTERNATE #1 -
2 (TWO) TRASH RECEPTACLES
- NEW OR EXISTING GRASS AREA
SEE PLANTING PLAN L-6
- CONTRACT LIMIT LINE

PROJECT BENCHMARK:
BOLT CLOSEST TO STREET
ELEV = 32.18
DATUM: NGVD 1929



Carolyn Cooney & Associates

Landscape Architecture / Planning
19 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
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REVISIONS



Project:
**WALTHAM PARK
IMPROVEMENTS PROJECT**

**MCKENNA
PLAYGROUND**

Prepared For:
**WALTHAM PLANNING
DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451**

TITLE:
MATERIALS PLAN

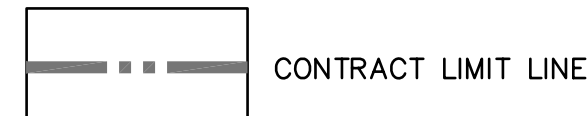
Scale 1" = 20' Date SEPT 17, 2012
Drawn By CCC
Checked By DRB
Approved By CCC
Project No. 1201.00

DWG No. **L-3**

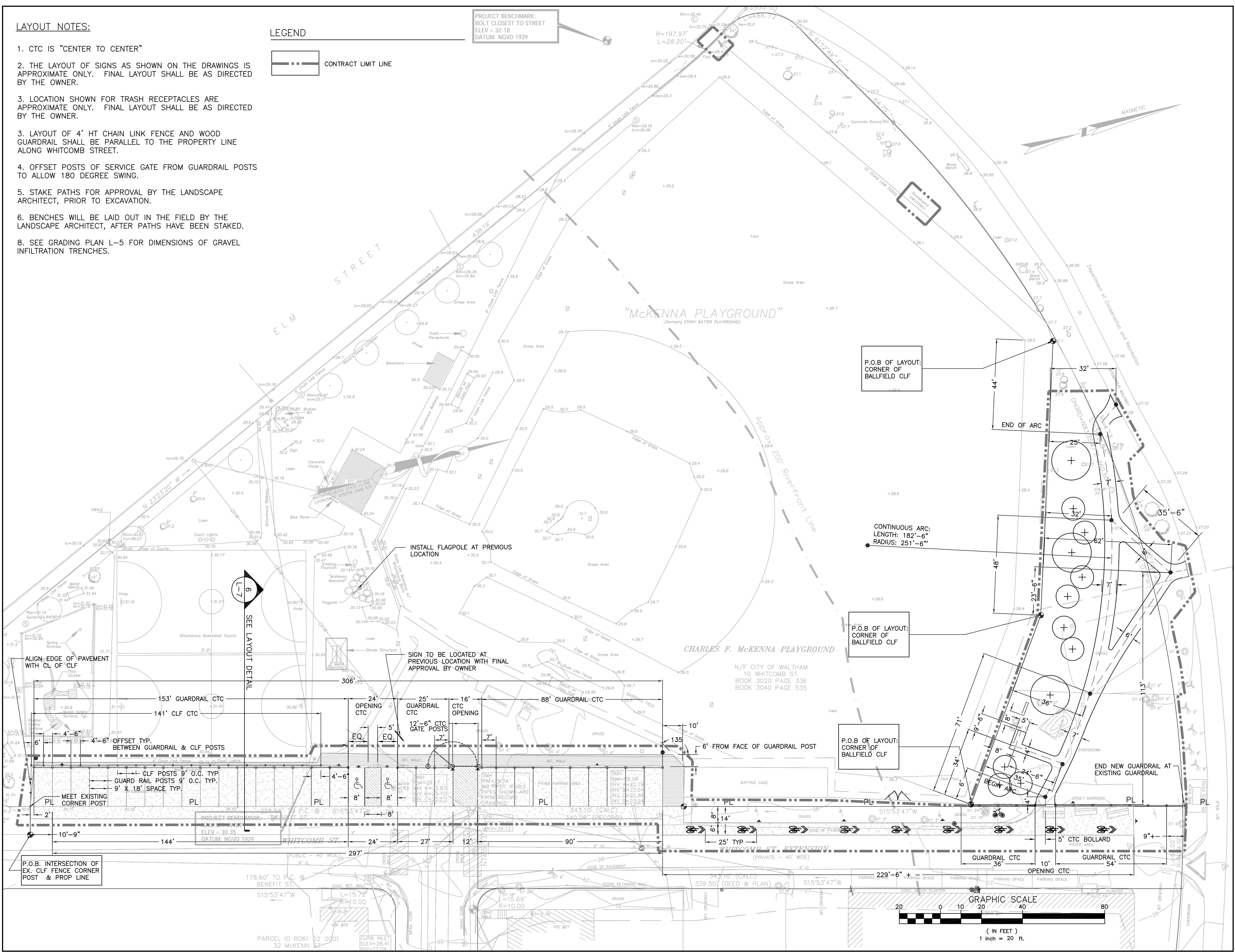
LAYOUT NOTES:

1. CTC IS "CENTER TO CENTER"
2. THE LAYOUT OF SIGNS AS SHOWN ON THE DRAWINGS IS APPROXIMATE ONLY. FINAL LAYOUT SHALL BE AS DIRECTED BY THE OWNER.
3. LOCATION SHOWN FOR TRASH RECEPTACLES ARE APPROXIMATE ONLY. FINAL LAYOUT SHALL BE AS DIRECTED BY THE OWNER.
3. LAYOUT OF 4' HT CHAIN LINK FENCE AND WOOD GUARDRAIL SHALL BE PARALLEL TO THE PROPERTY LINE ALONG WHITCOMB STREET.
4. OFFSET POSTS OF SERVICE GATE FROM GUARDRAIL POSTS TO ALLOW 180 DEGREE SWING.
5. STAKE PATHS FOR APPROVAL BY THE LANDSCAPE ARCHITECT, PRIOR TO EXCAVATION.
6. BENCHES WILL BE LAID OUT IN THE FIELD BY THE LANDSCAPE ARCHITECT, AFTER PATHS HAVE BEEN STAKED.
8. SEE GRADING PLAN L-5 FOR DIMENSIONS OF GRAVEL INFILTRATION TRENCHES.

LEGEND



PROJECT BENCHMARK:
BOLT CLOSEST TO STREET
ELEV = 32.18
DATUM: NGVD 1929



Carolyn Cooney & Associates
Landscape Architecture / Planning
19 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
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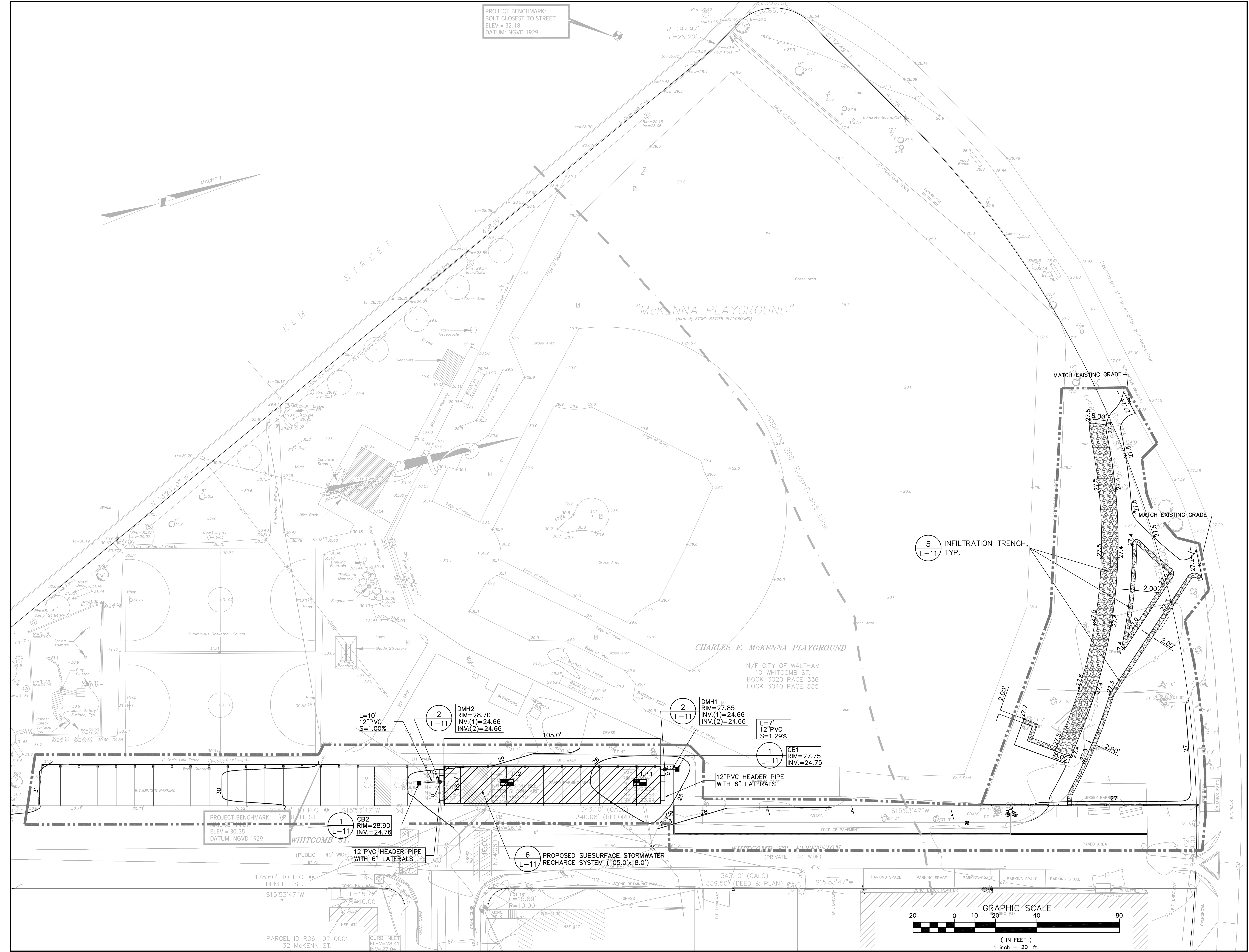
Project:
WALTHAM PARK IMPROVEMENTS PROJECT
MCKENNA PLAYGROUND

Prepared For:
WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451

TITLE:
LAYOUT PLAN

Scale 1" = 20' Date SEPT 17, 2012
Drawn By CCC
Checked By DRB
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Project No. 1201.00

DWG No. **L-4**



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 Landscape Architecture / Planning
 19 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
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 CONSULTING CIVIL ENGINEERS

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| REVISIONS | | |
|-----------|-------------|------|
| No. | Description | Date |
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Project:
WALTHAM PARK IMPROVEMENTS PROJECT
MCKENNA PLAYGROUND

Prepared For:
WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451

TITLE:
GRADING AND DRAINAGE PLAN

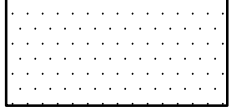

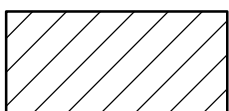
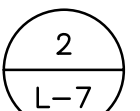
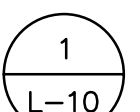

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 Project No. 1201.00

DWG No. **L-5**

PLANTING NOTES:

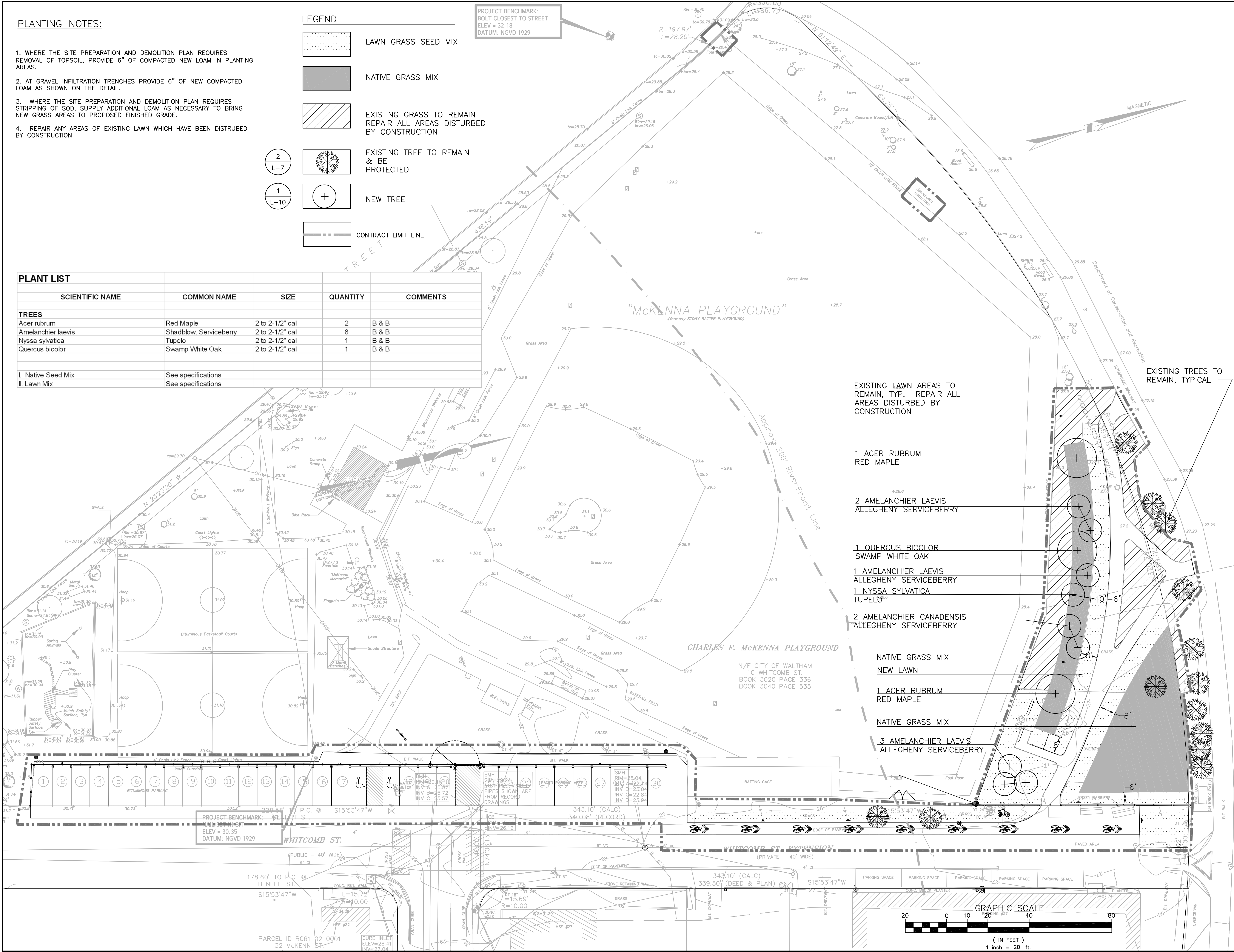
- WHERE THE SITE PREPARATION AND DEMOLITION PLAN REQUIRES REMOVAL OF TOPSOIL, PROVIDE 6" OF COMPACTED NEW LOAM IN PLANTING AREAS.
- AT GRAVEL INFILTRATION TRENCHES PROVIDE 6" OF NEW COMPACTED LOAM AS SHOWN ON THE DETAIL.
- WHERE THE SITE PREPARATION AND DEMOLITION PLAN REQUIRES STRIPPING OF SOD, SUPPLY ADDITIONAL LOAM AS NECESSARY TO BRING NEW GRASS AREAS TO PROPOSED FINISHED GRADE.
- REPAIR ANY AREAS OF EXISTING LAWN WHICH HAVE BEEN DISTURBED BY CONSTRUCTION.

LEGEND

-  LAWN GRASS SEED MIX
-  NATIVE GRASS MIX
-  EXISTING GRASS TO REMAIN
REPAIR ALL AREAS DISTURBED BY CONSTRUCTION
-  EXISTING TREE TO REMAIN & BE PROTECTED
-  NEW TREE
-  CONTRACT LIMIT LINE

PROJECT BENCHMARK:
BOLT CLOSEST TO STREET
ELEV = 32.18
DATUM: NGVD 1929

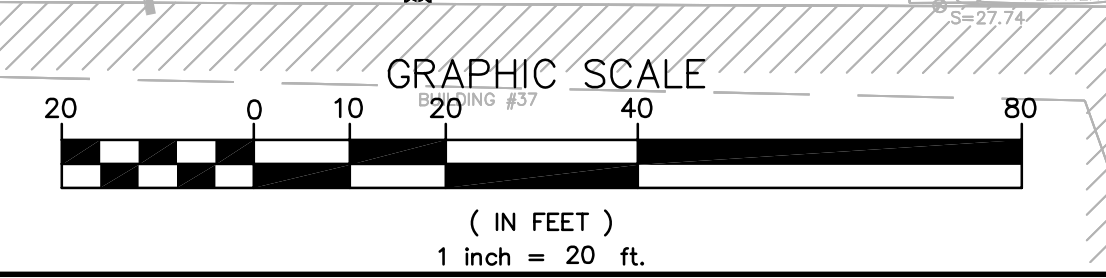
| SCIENTIFIC NAME | COMMON NAME | SIZE | QUANTITY | COMMENTS |
|---------------------------|------------------------|-----------------|----------|----------|
| TREES | | | | |
| <i>Acer rubrum</i> | Red Maple | 2 to 2-1/2" cal | 2 | B & B |
| <i>Amelanchier laevis</i> | Shadblow, Serviceberry | 2 to 2-1/2" cal | 8 | B & B |
| <i>Nyssa sylvatica</i> | Tupelo | 2 to 2-1/2" cal | 1 | B & B |
| <i>Quercus bicolor</i> | Swamp White Oak | 2 to 2-1/2" cal | 1 | B & B |
| I. Native Seed Mix | | | | |
| See specifications | | | | |
| II. Lawn Mix | | | | |
| See specifications | | | | |



EXISTING LAWN AREAS TO REMAIN, TYP. REPAIR ALL AREAS DISTURBED BY CONSTRUCTION

EXISTING TREES TO REMAIN, TYPICAL

- 1 ACER RUBRUM
RED MAPLE
- 2 AMELANCHIER LAEVIS
ALLEGHENY SERVICEBERRY
- 1 QUERCUS BICOLOR
SWAMP WHITE OAK
- 1 AMELANCHIER LAEVIS
ALLEGHENY SERVICEBERRY
- 1 NYSSA SYLVATICA
TUPELO
- 2 AMELANCHIER CANADENSIS
ALLEGHENY SERVICEBERRY
- NATIVE GRASS MIX
- NEW LAWN
- 1 ACER RUBRUM
RED MAPLE
- NATIVE GRASS MIX
- 3 AMELANCHIER LAEVIS
ALLEGHENY SERVICEBERRY




Carolyn Cooney & Associates
Landscape Architecture / Planning
19 Elm Street, Millis, MA 01957
Telephone 508 478 8426, Facsimile 508 478 8607

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



Project:
WALTHAM PARK IMPROVEMENTS PROJECT

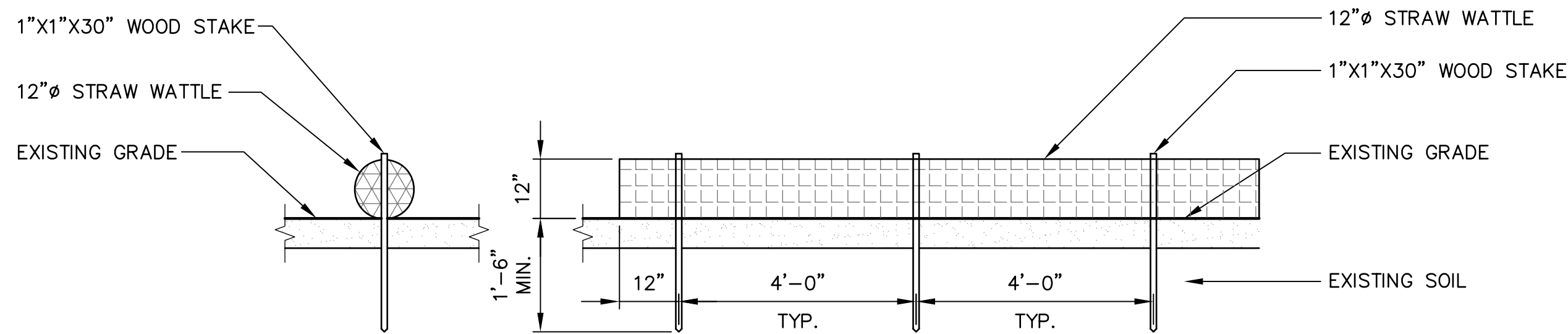
MCKENNA PLAYGROUND

Prepared For:
**WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451**

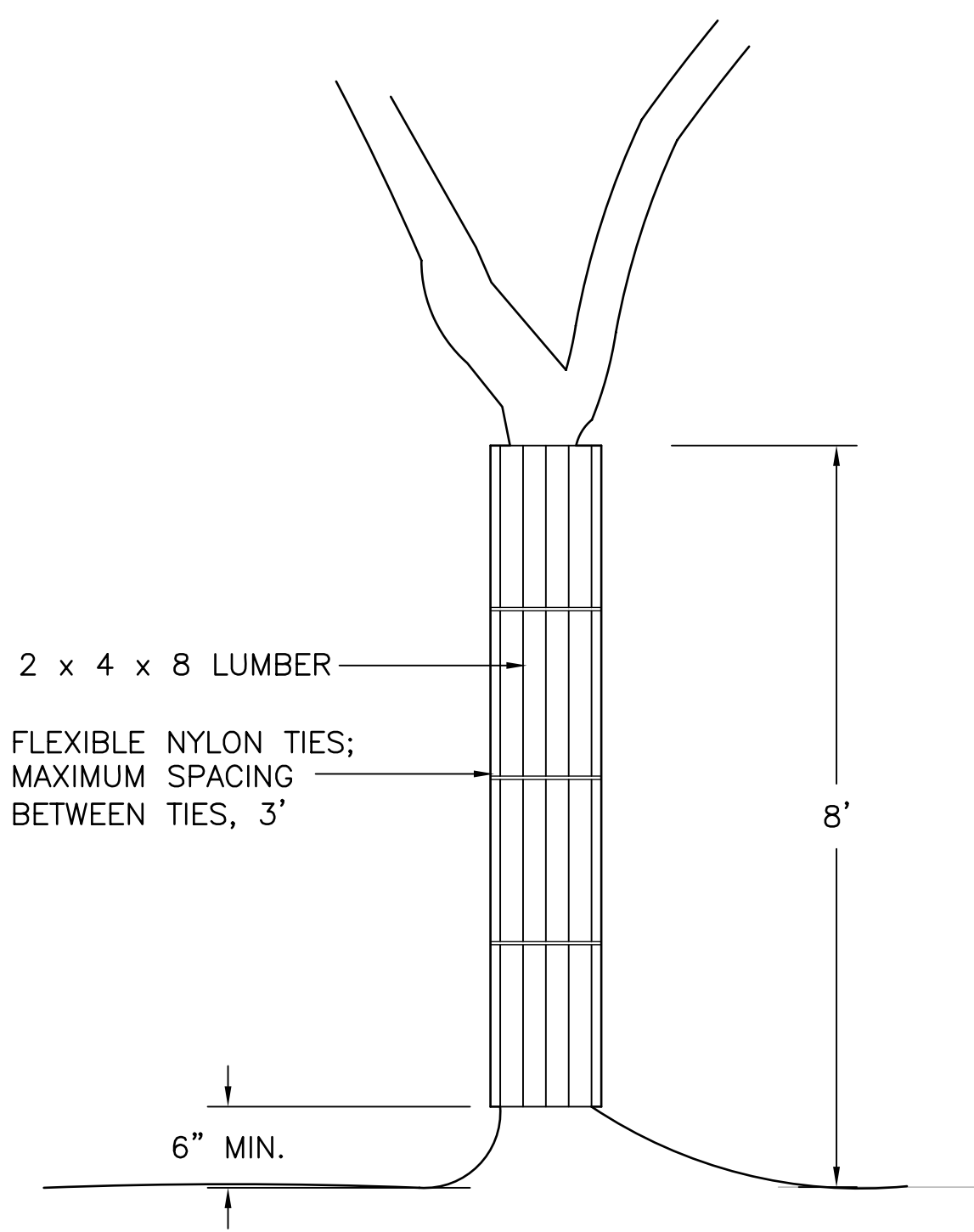
TITLE:
PLANTING PLAN

Scale 1"=20' Date SEPT 17, 2012
Drawn By CCC
Checked By DRB
Approved By CCC
Project No. 1201.00

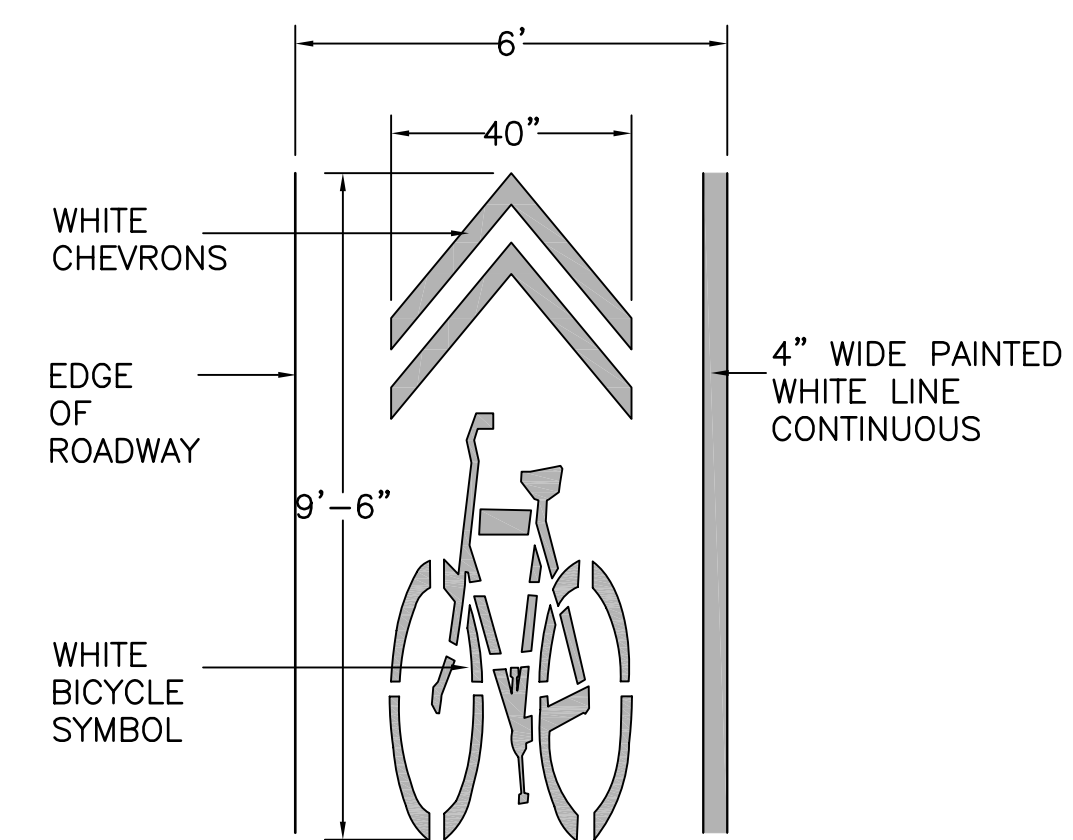
DWG No. **L-6**



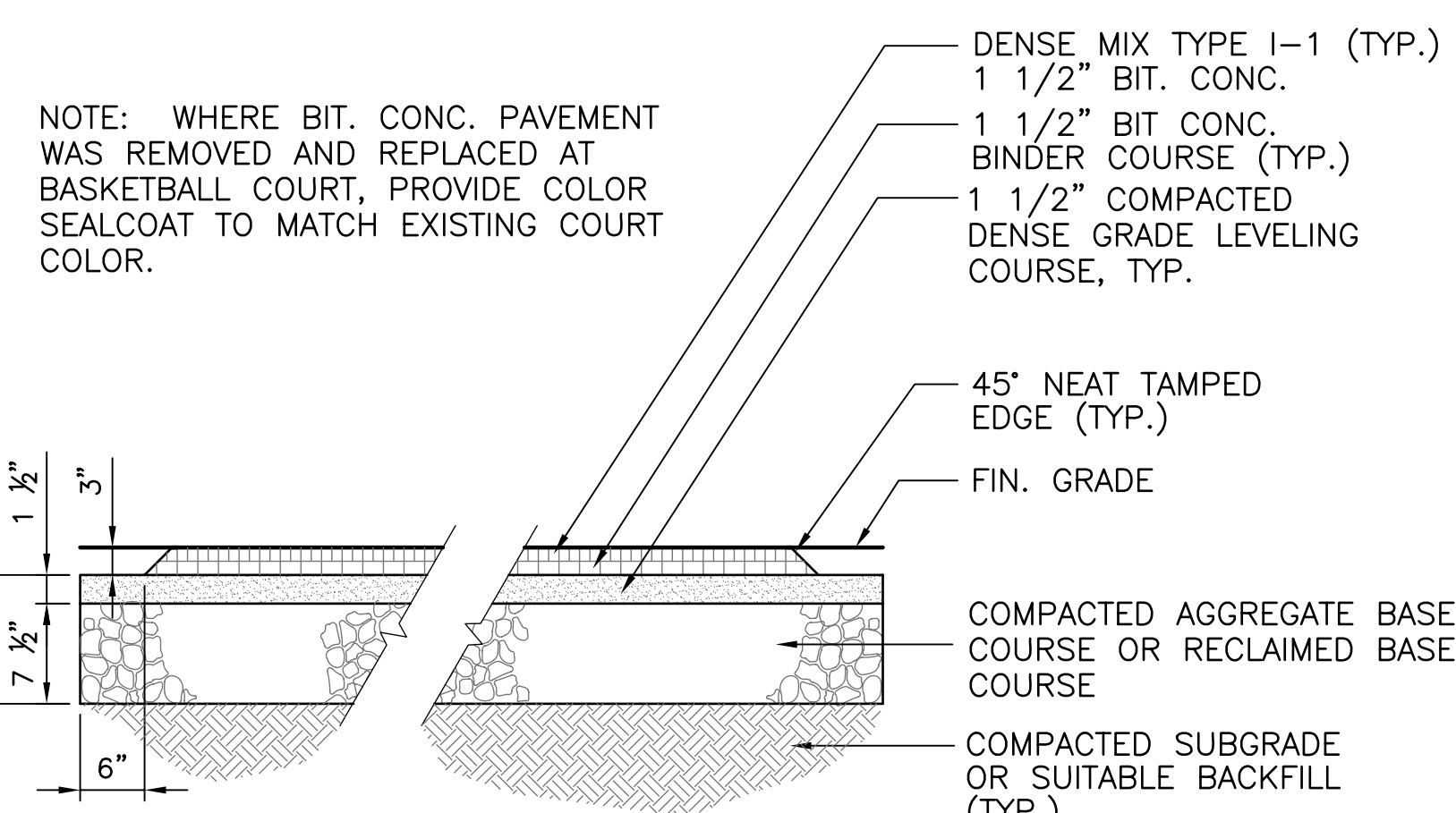
SECTION
1 STRAW WATTLE DETAIL
 N.T.S.



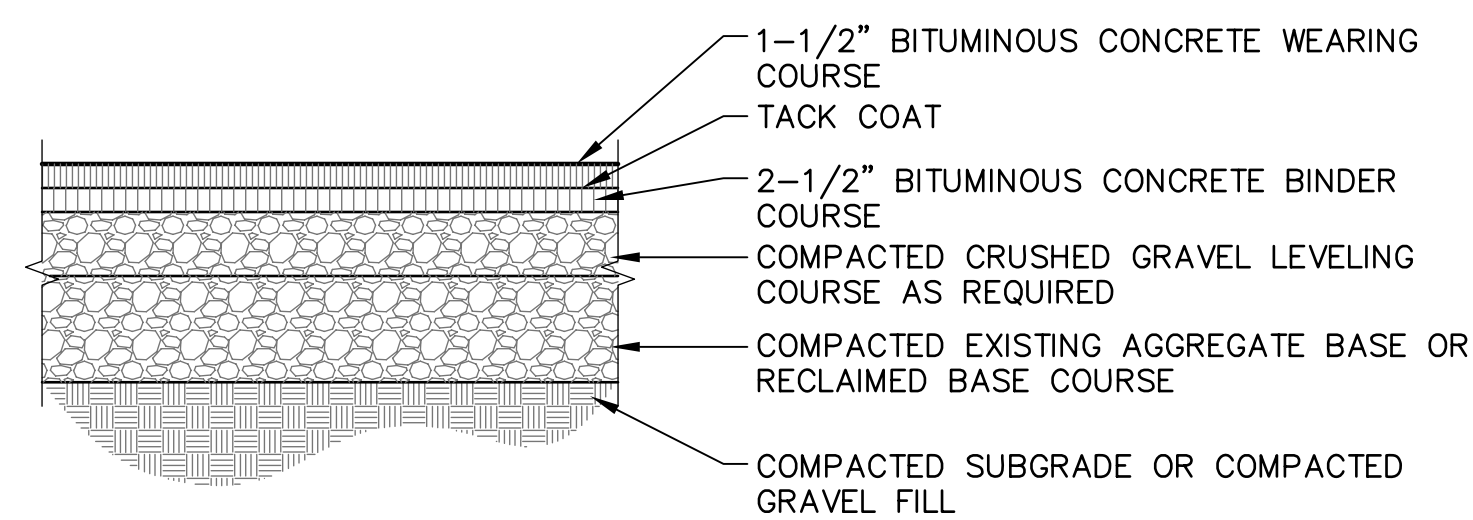
SECTION
2 TREE PROTECTION DETAIL
 1/2" = 1'-0"



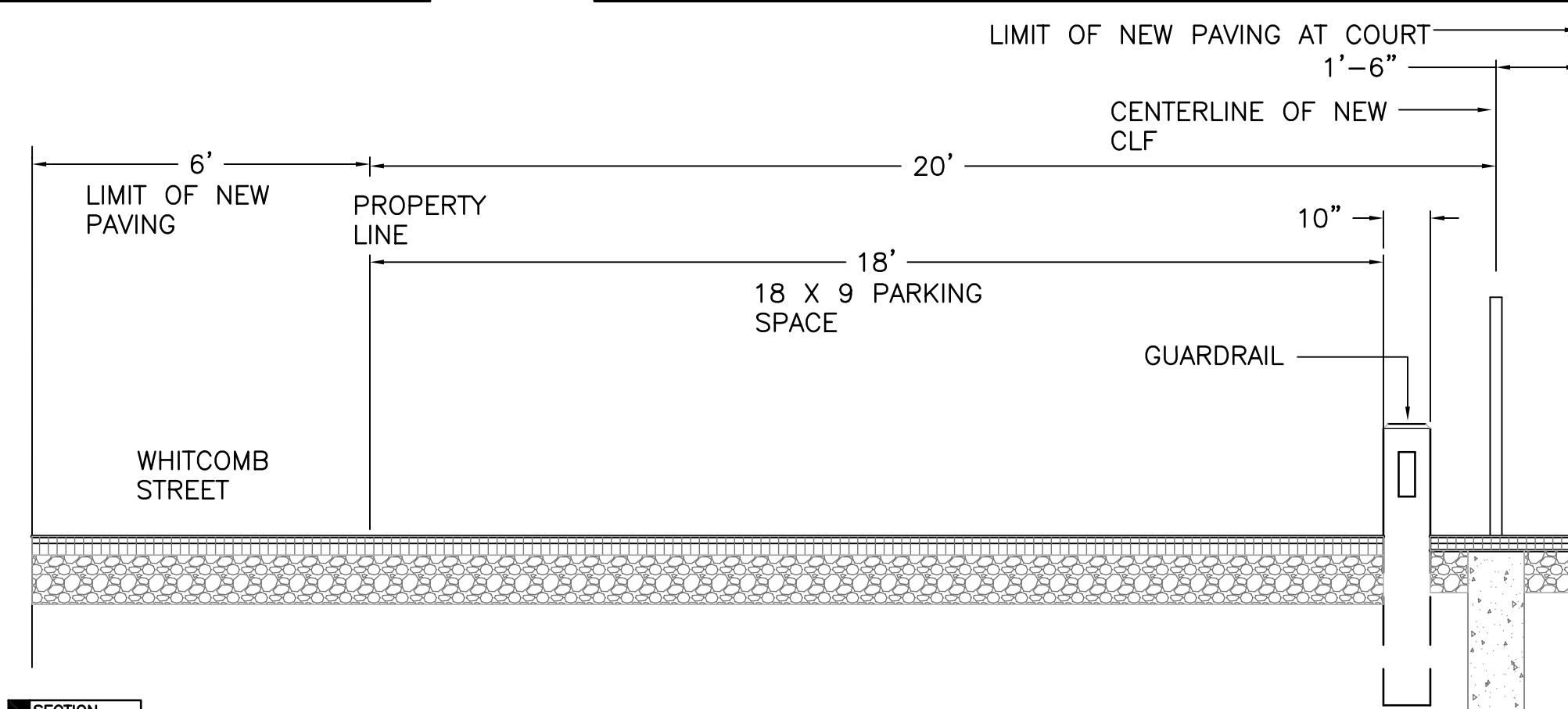
PLAN
3 PAVEMENT MARKING ON ROADWAY
 N.T.S.



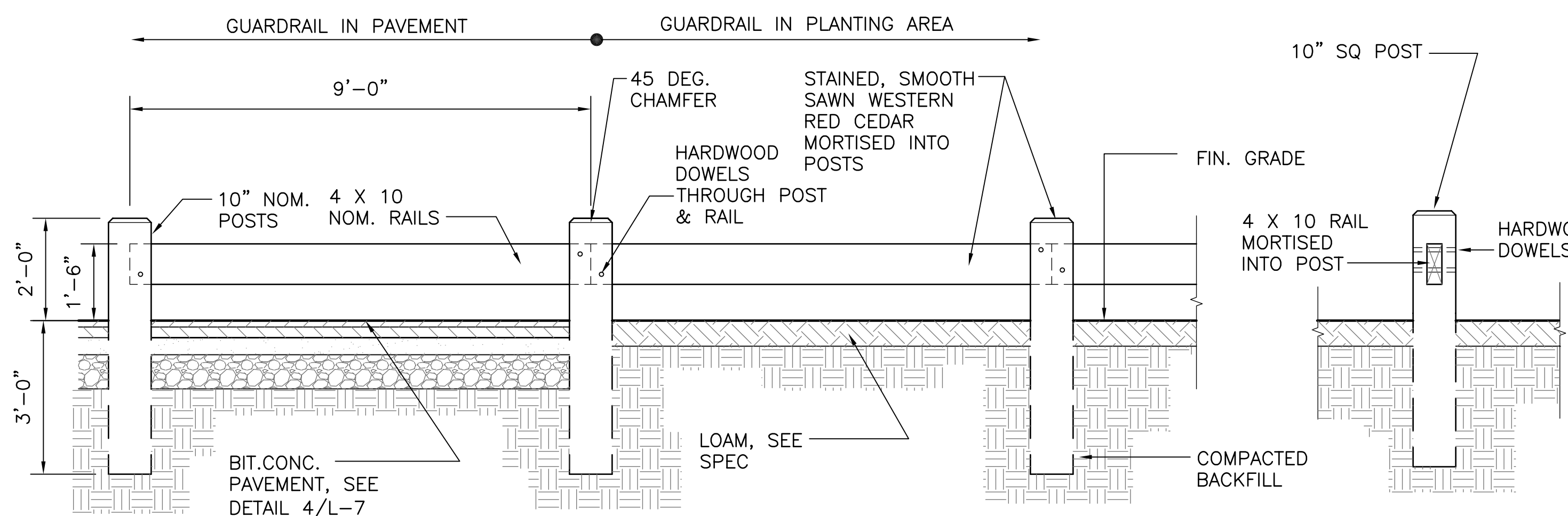
SECTION
4 BITUMINOUS CONCRETE WALKWAY PAVEMENT
 N.T.S.



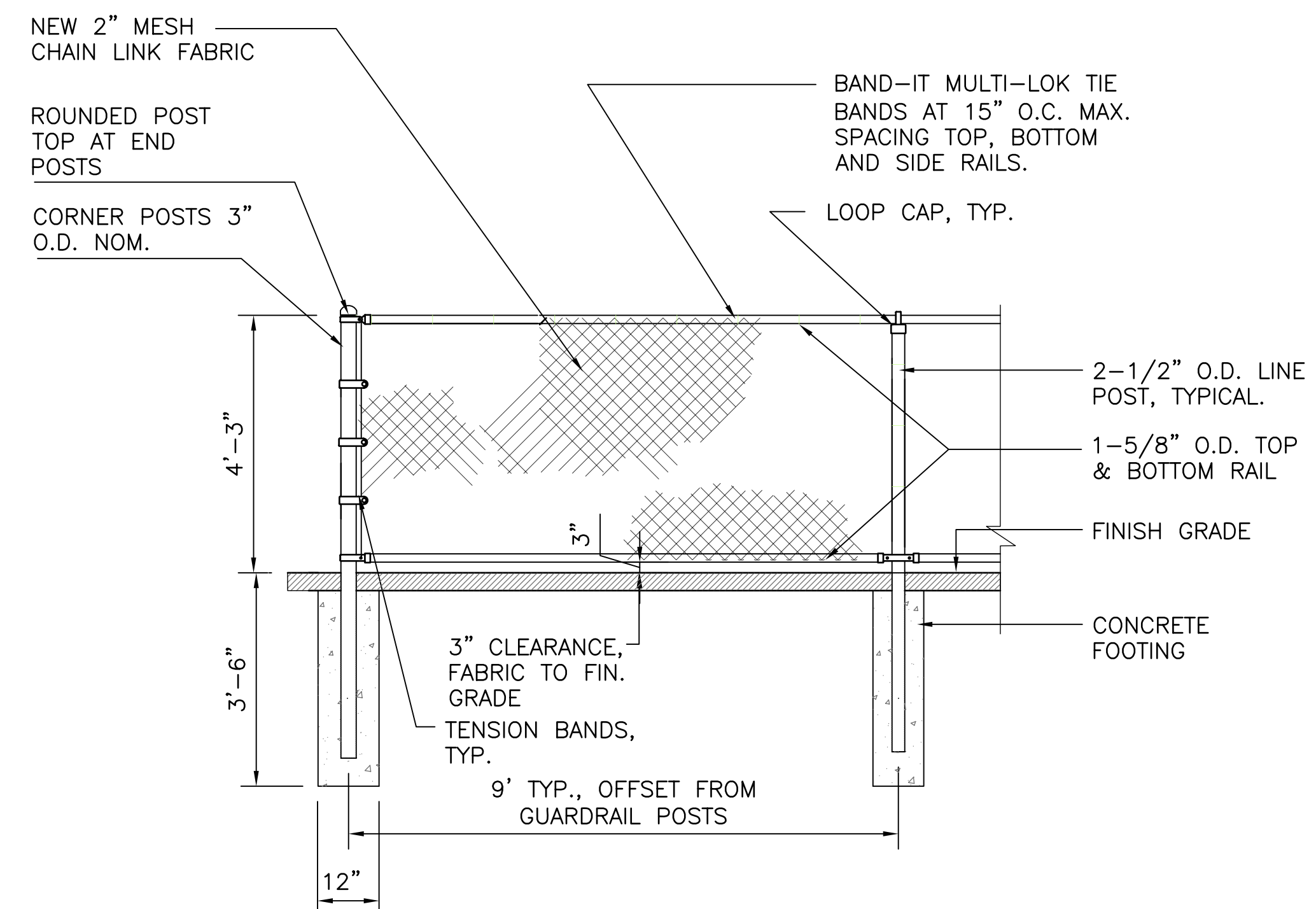
SECTION
5 BITUMINOUS CONCRETE VEHICULAR PAVEMENT
 N.T.S.



SECTION
6 LAYOUT AT PARKING LOT
 N.T.S.



SECTION
7 WOOD GUARDRAIL
 1/2" = 1'-0"

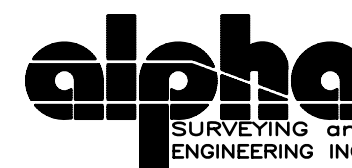


SECTION
8 4' HT. CHAIN LINK FENCE
 1/2" = 1'-0"

Carolyn Cooney & Associates

Landscape Architecture / Planning
 19 Elm Street, Milford, MA 01757
 Telephone 508 478 8426, Facsimile 508 478 8607

Site Engineering Consultants, Inc.
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 TEL: (781) 784-0326
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REVISIONS



Project:
WALTHAM PARK IMPROVEMENTS PROJECT

MCKENNA PLAYGROUND

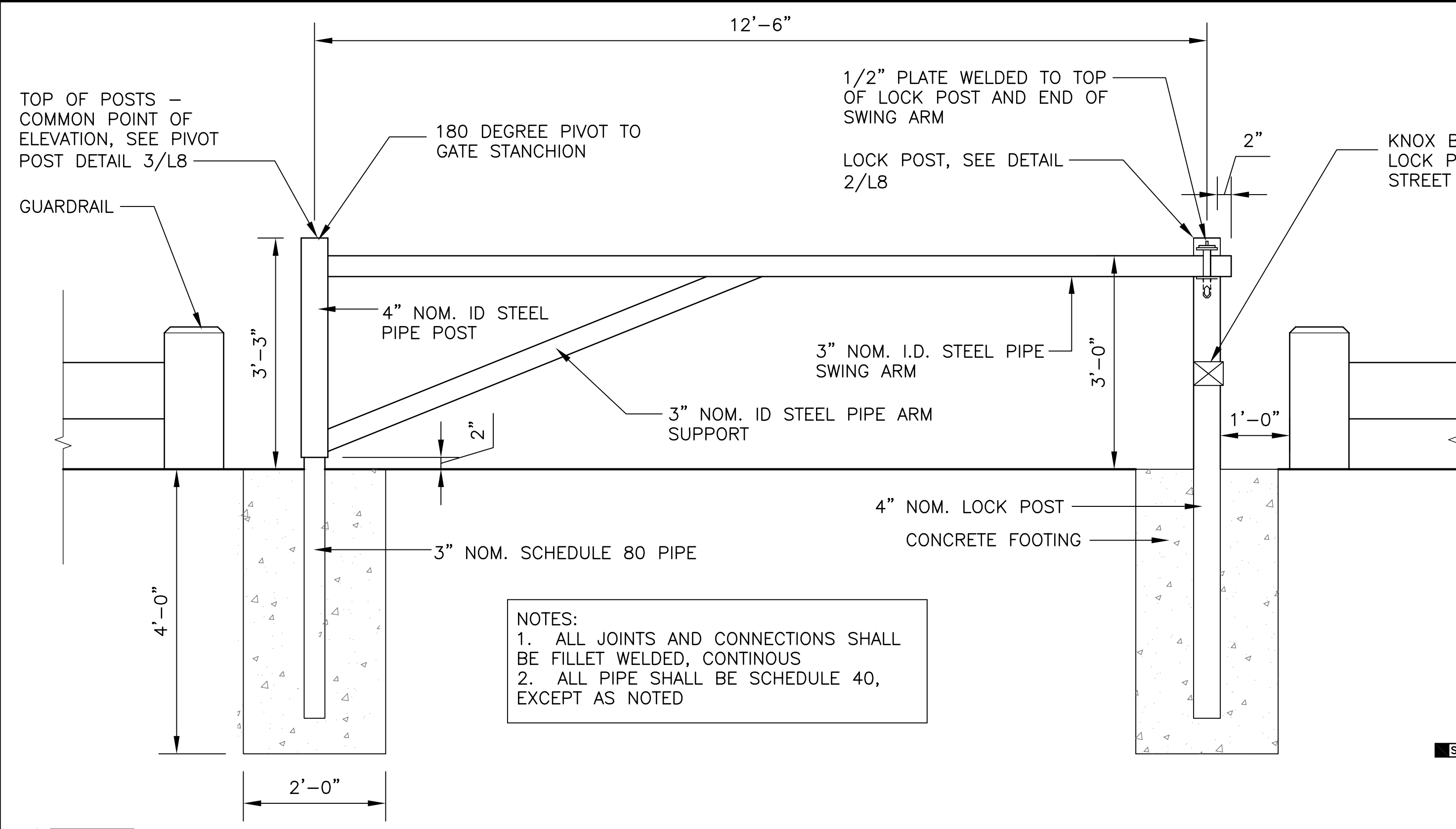
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WALTHAM PLANNING DEPARTMENT
 119 SCHOOL STREET
 WALTHAM, MA 02451

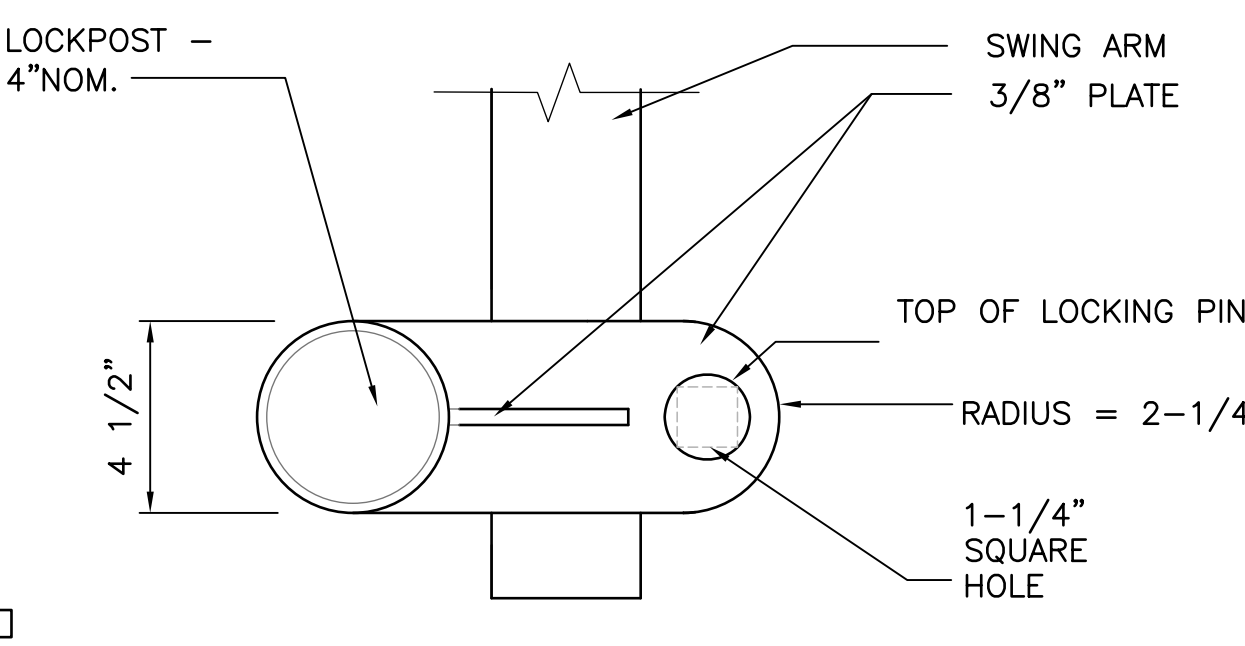
TITLE:
DETAILS

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 Project No. 1201.00

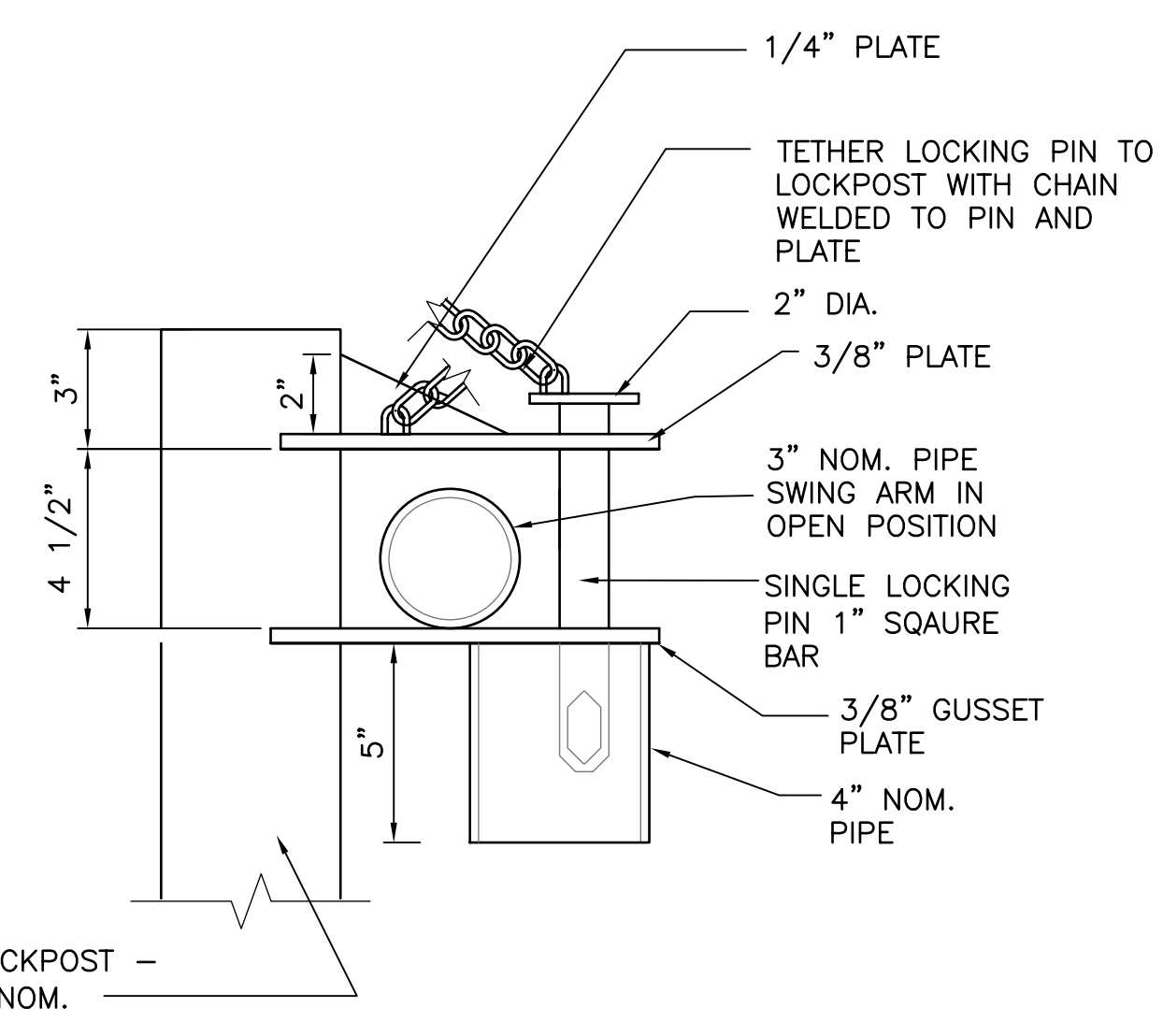
DWG No. **L-7**



NOTES:
 1. ALL JOINTS AND CONNECTIONS SHALL BE FILLET WELDED, CONTINUOUS
 2. ALL PIPE SHALL BE SCHEDULE 40, EXCEPT AS NOTED

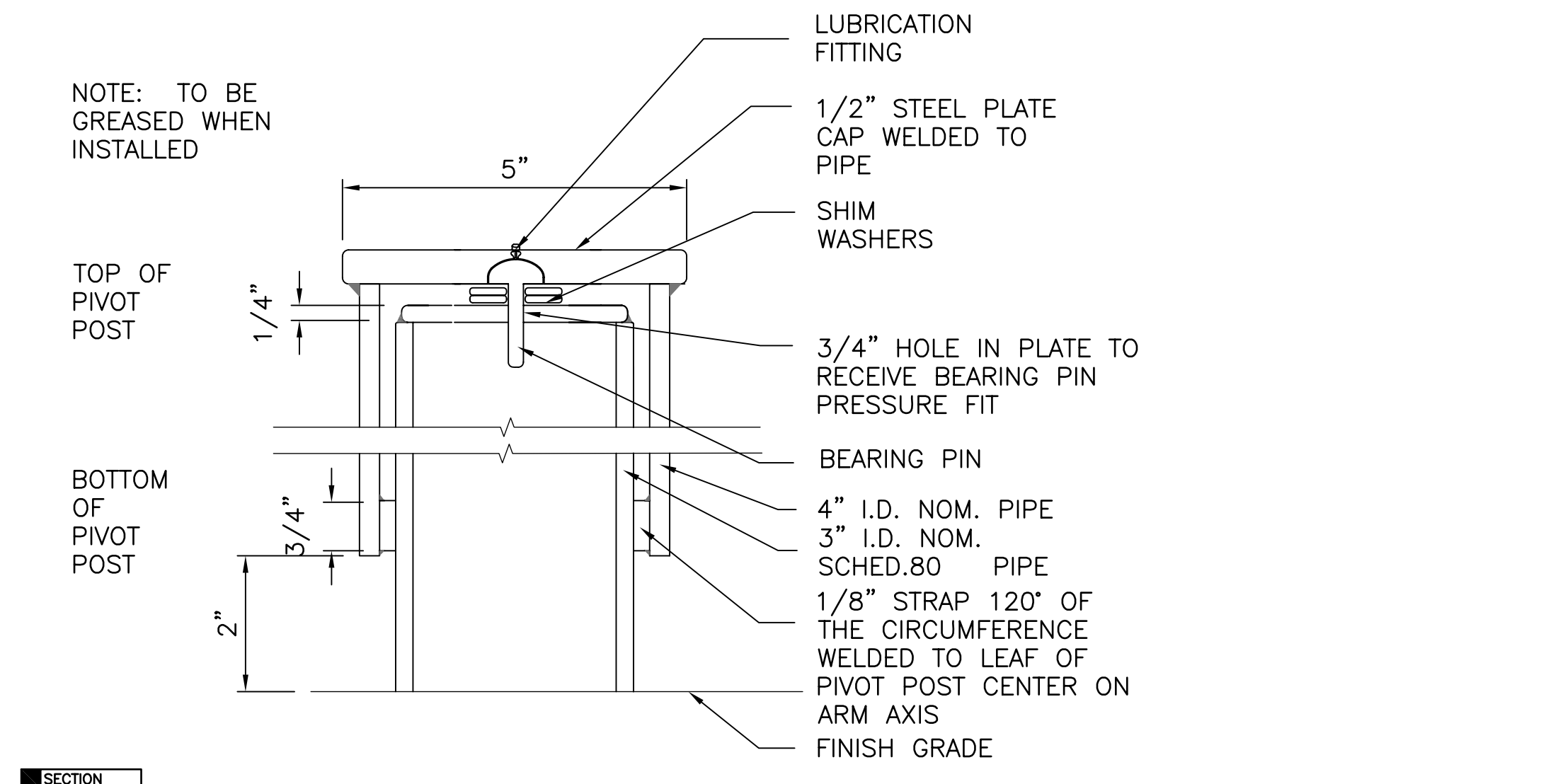


NOTE: PROVIDE STANCHION POST AT 180, IDENTICAL TO LOCK POST EXCEPT FOR ORIENTATION.

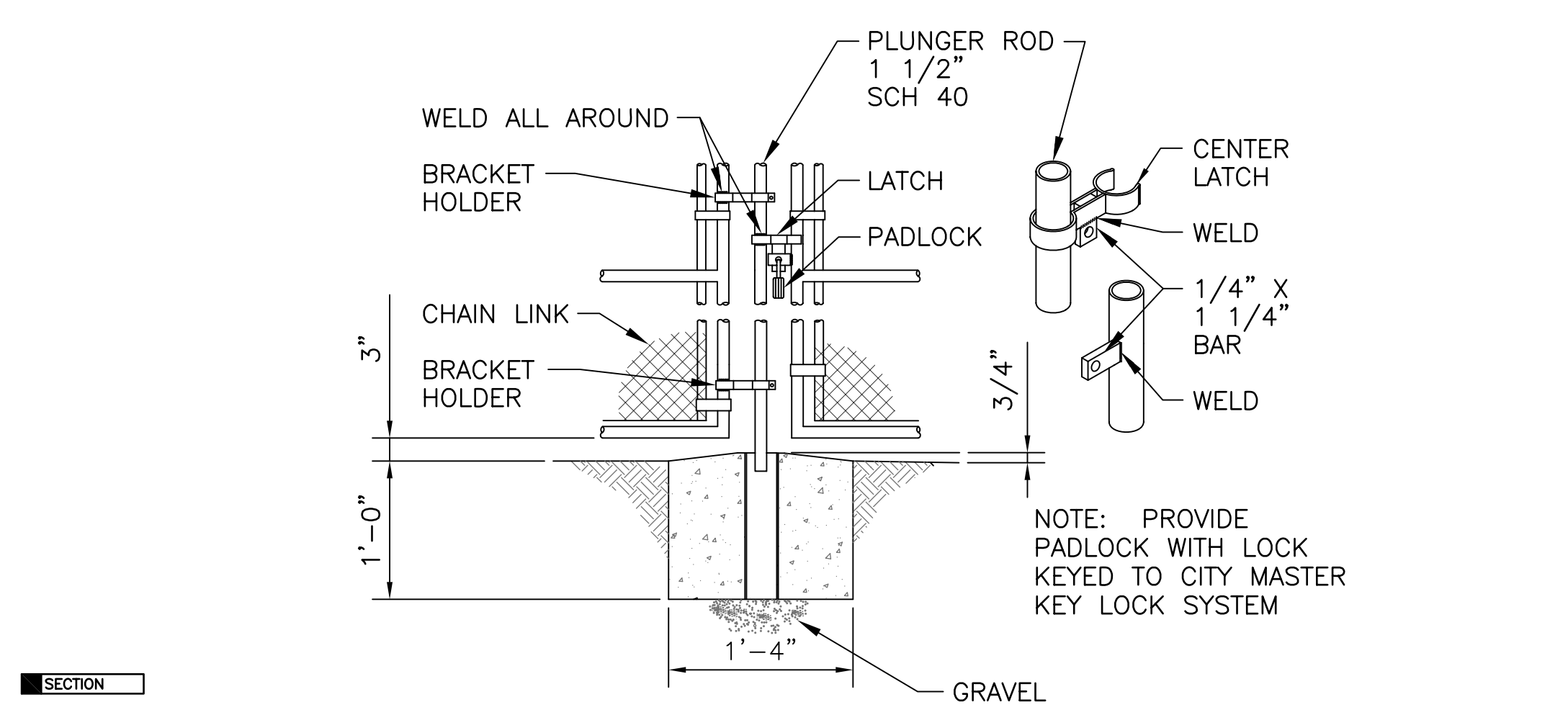


1 SERVICE GATE AT PARKING LOT
 3/4" = 1'-0"

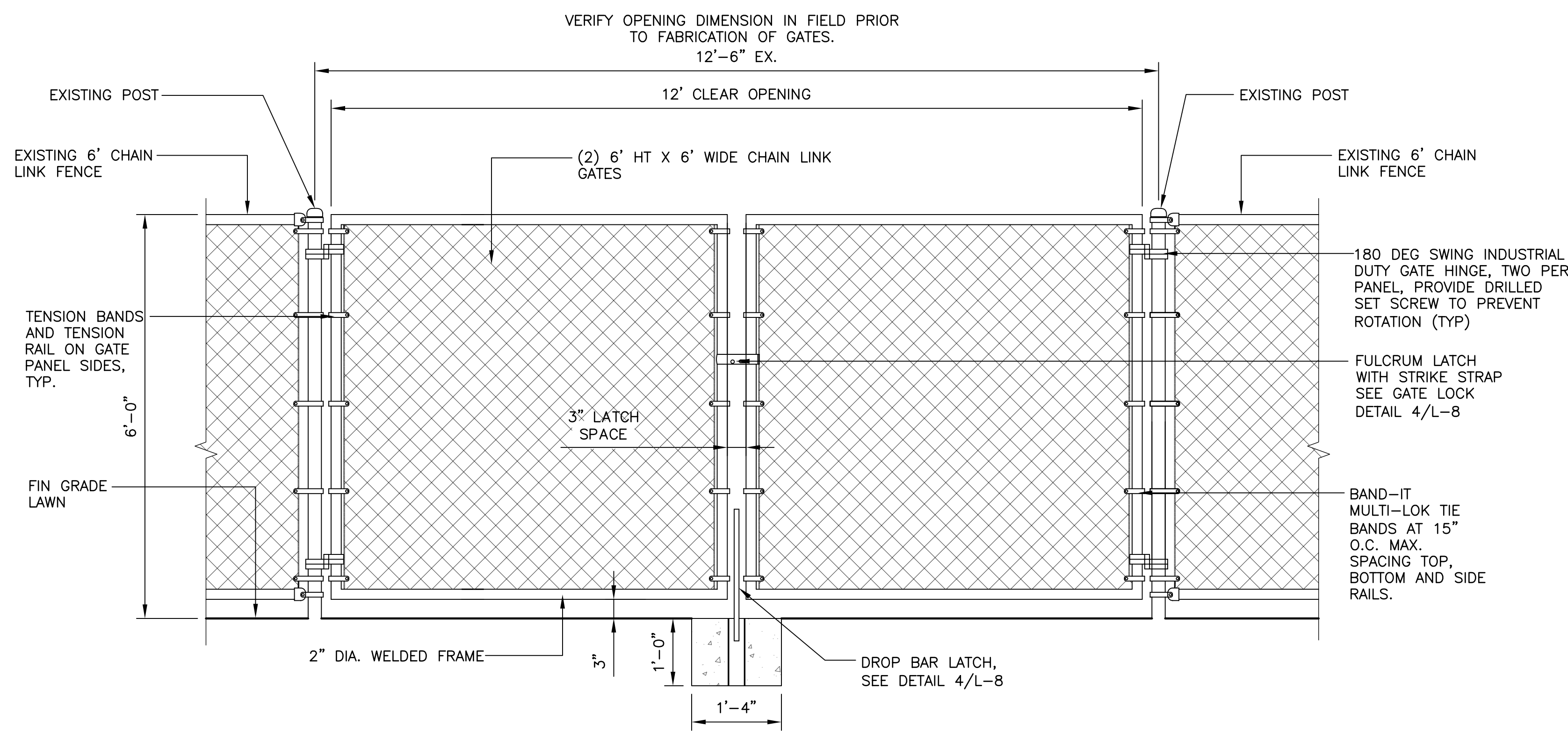
2 SERVICE GATE LOCK POST DETAIL
 N.T.S.



3 SERVICE GATE PIVOT POST DETAIL
 N.T.S.



4 CHAIN LINK GATE LOCK DETAIL
 1" = 1'-0"



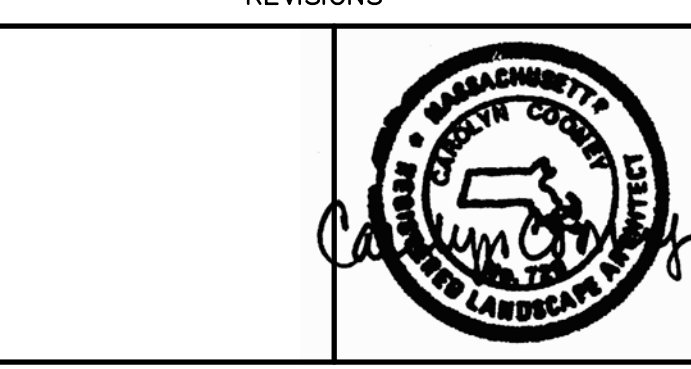
5 DOUBLE CHAIN LINK SWING GATE
 3/4" = 1'-0"

Carolyn Cooney & Associates
 Landscape Architecture / Planning
 19 Elm Street, Milford, MA 01757
 Telephone 508 478 8426, Facsimile 508 478 8607

Site Engineering Consultants, Inc.
 55 Grape Shot Road
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 TEL: (781) 784-0326
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Project:
WALTHAM PARK IMPROVEMENTS PROJECT

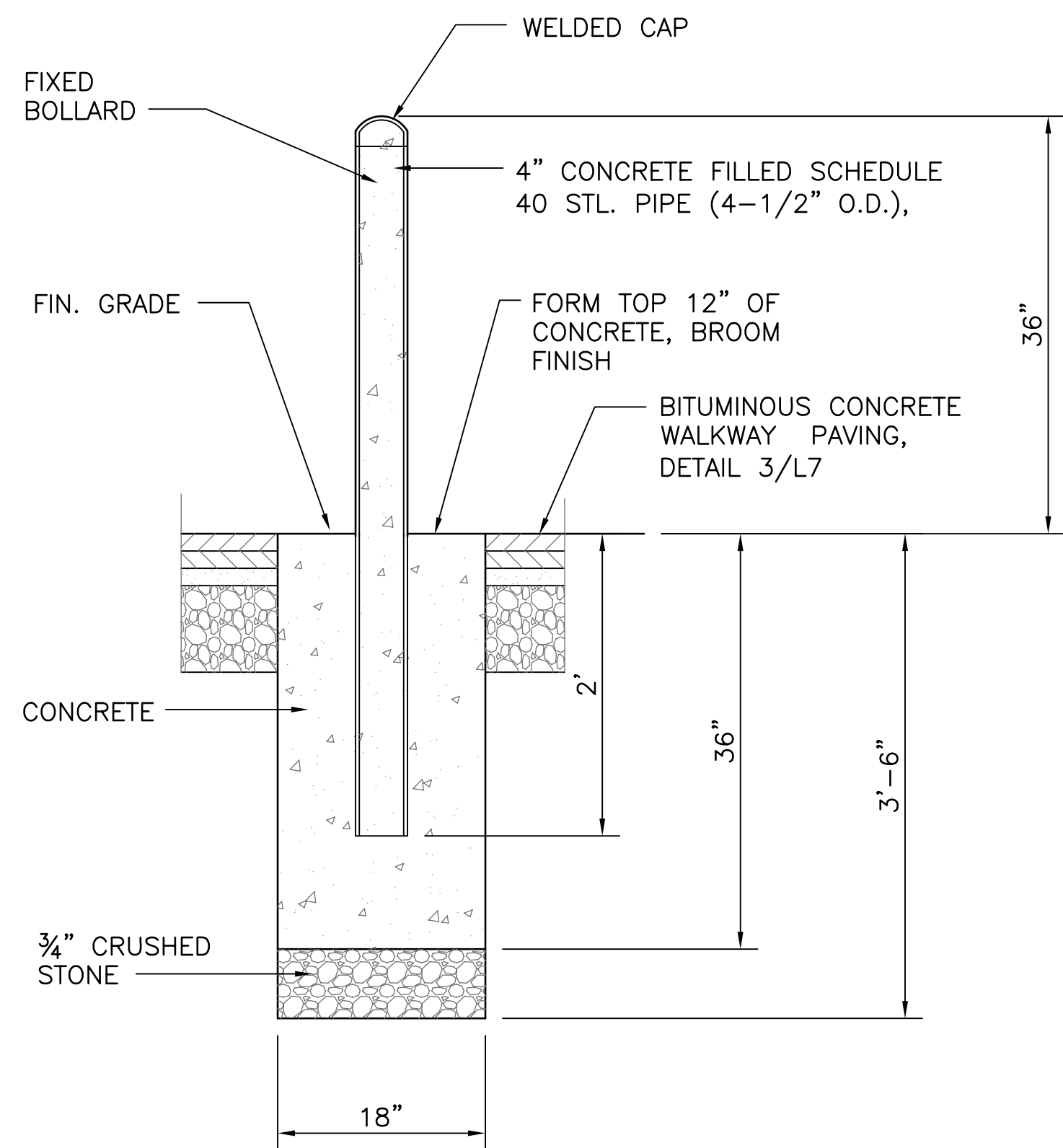
MCKENNA PLAYGROUND

Prepared For:
WALTHAM PLANNING DEPARTMENT
 119 SCHOOL STREET
 WALTHAM, MA 02451

TITLE:
DETAILS

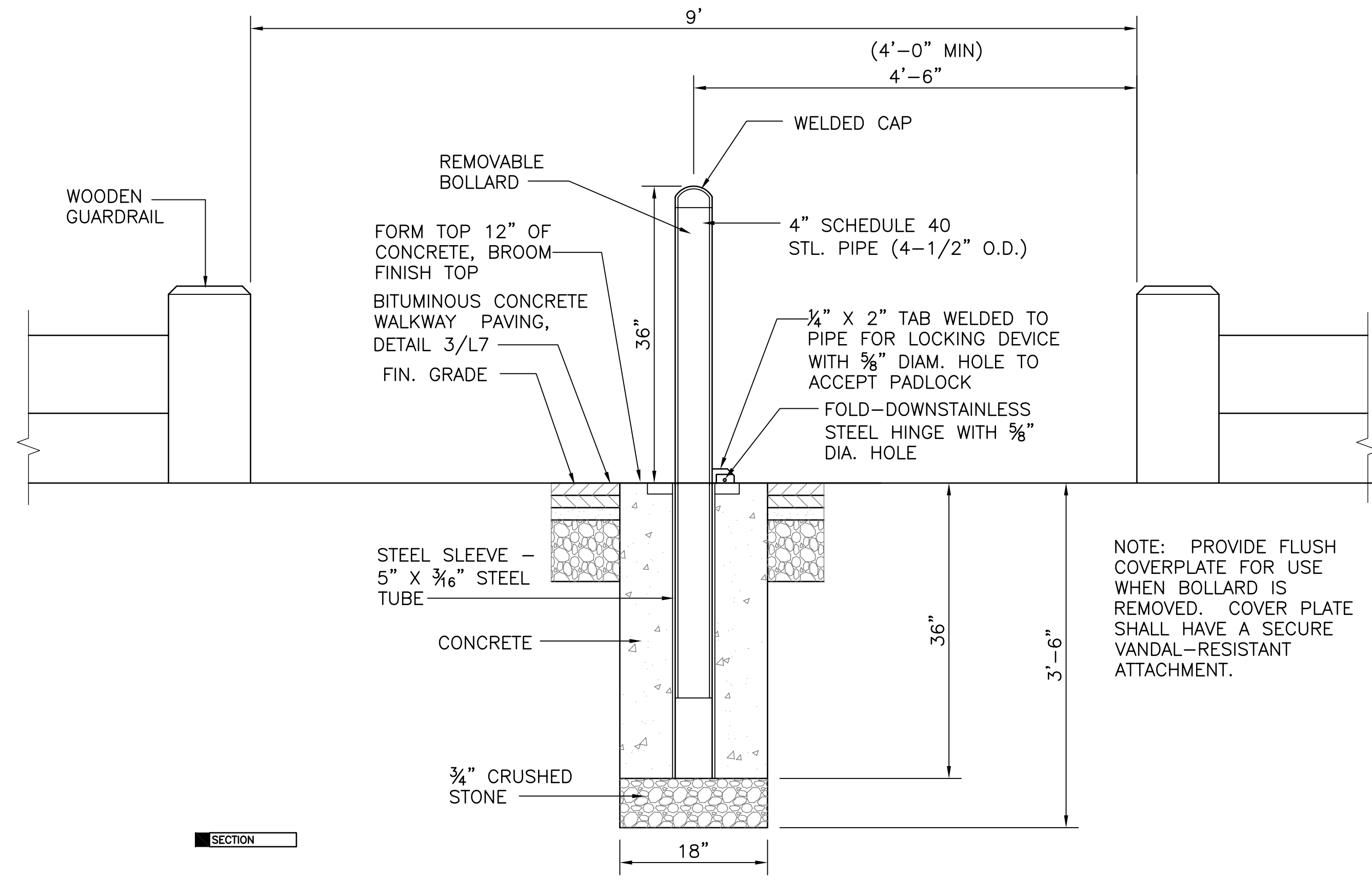
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DWG No. **L-8**



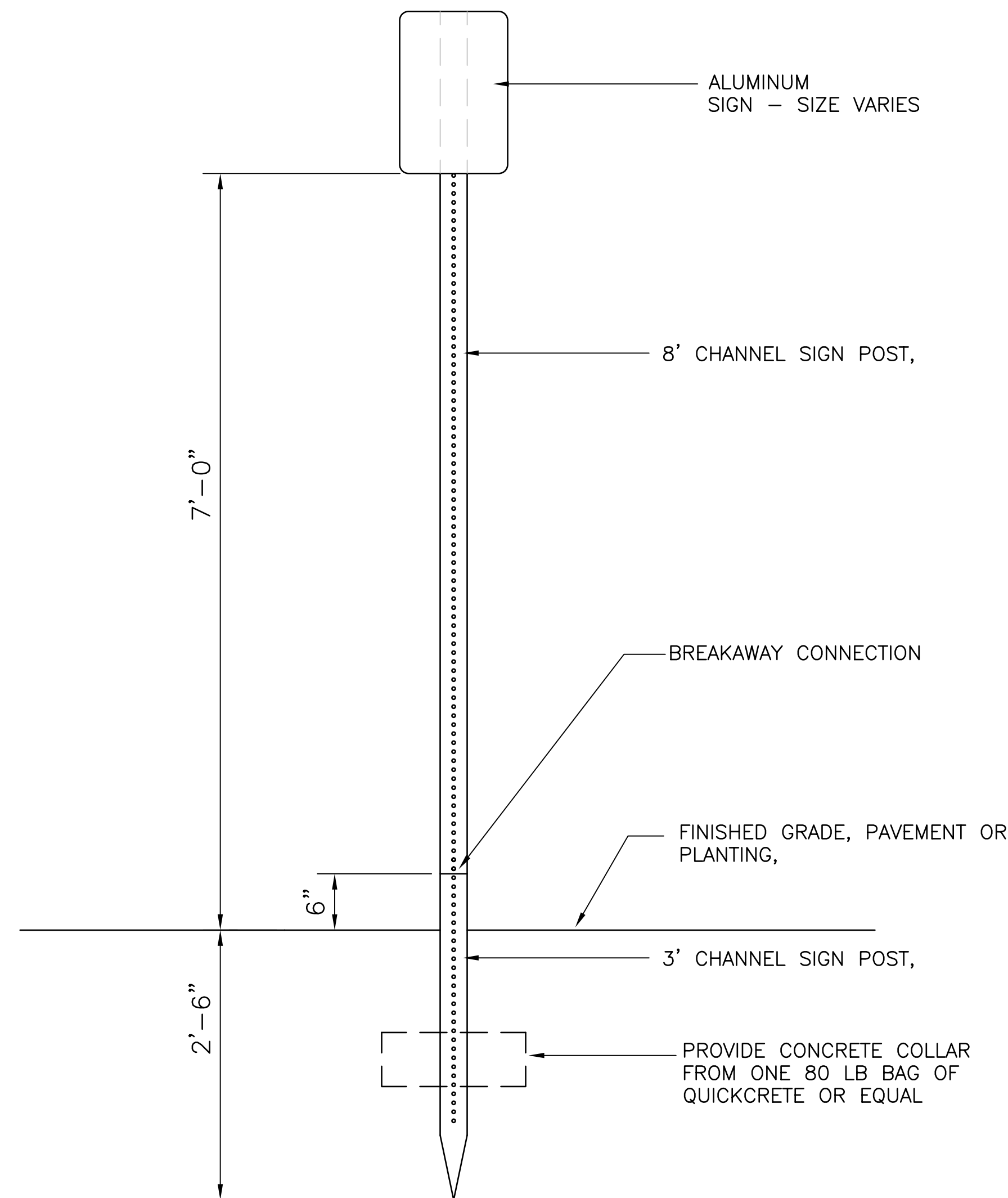
SECTION

1 FIXED BOLLARD
1" = 1'-0"



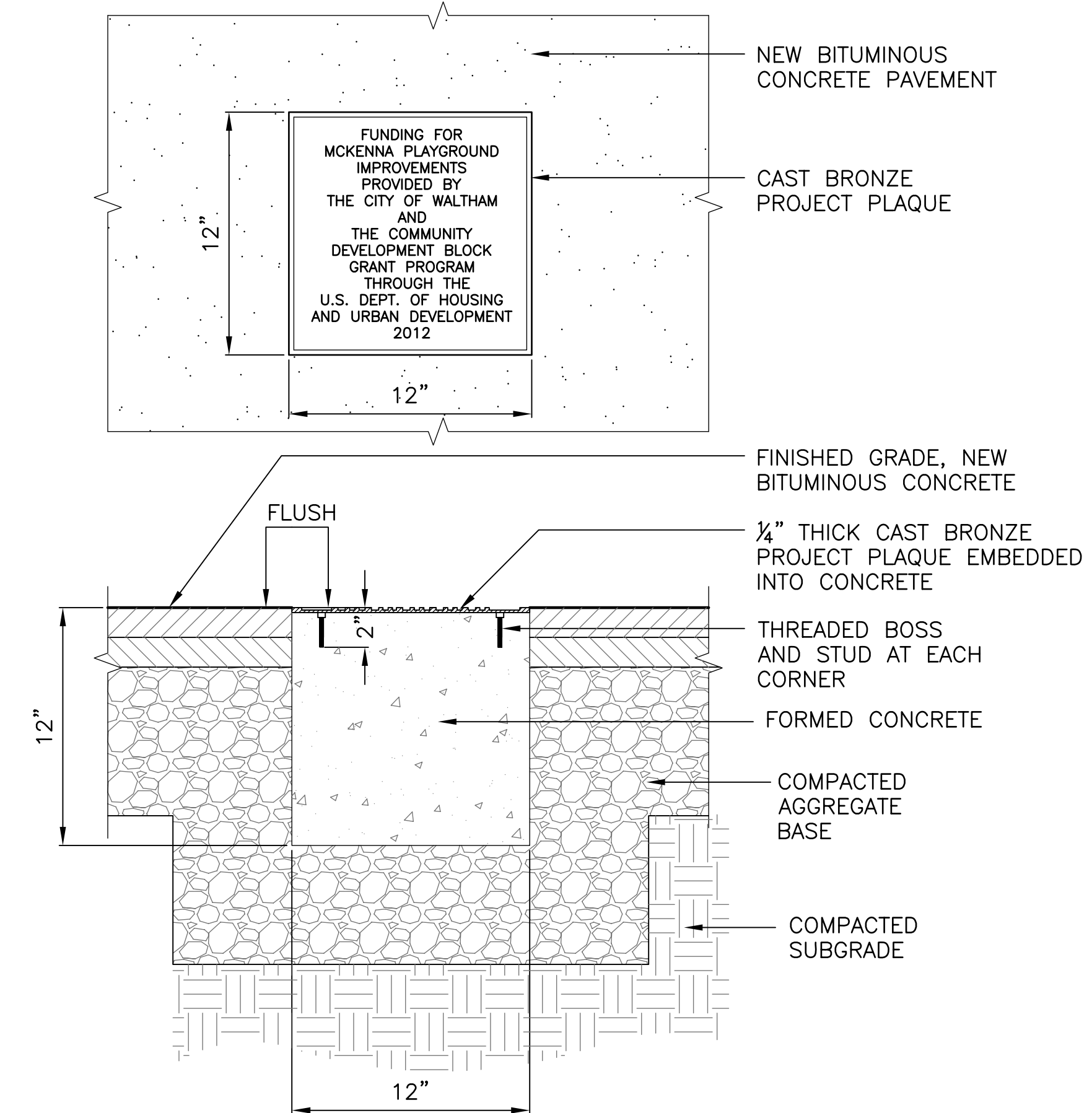
SECTION

2 REMOVABLE BOLLARD
1" = 1'-0"



ELEVATION

3 PARKING SIGN
1" = 1'-0"



SECTION

4 BRONZE PLAQUE
N.T.S.

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Landscape Architecture / Planning
19 Elm Street, Milford, MA 01757
Telephone 508 478 8426, Facsimile 508 478 8607

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TEL: (781) 784-0326
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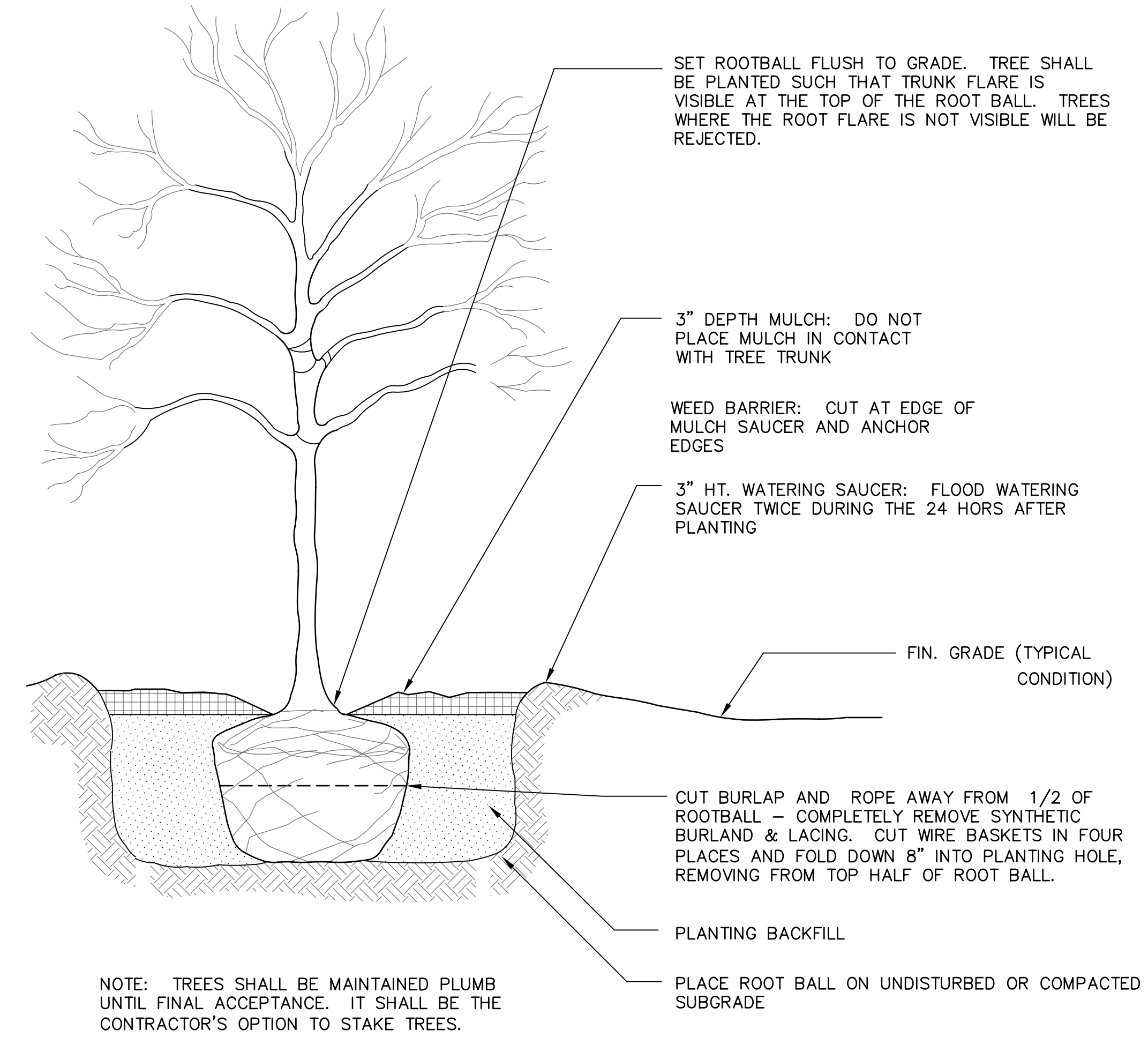
Project:
WALTHAM PARK IMPROVEMENTS PROJECT
MCKENNA PLAYGROUND

Prepared For:
WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451

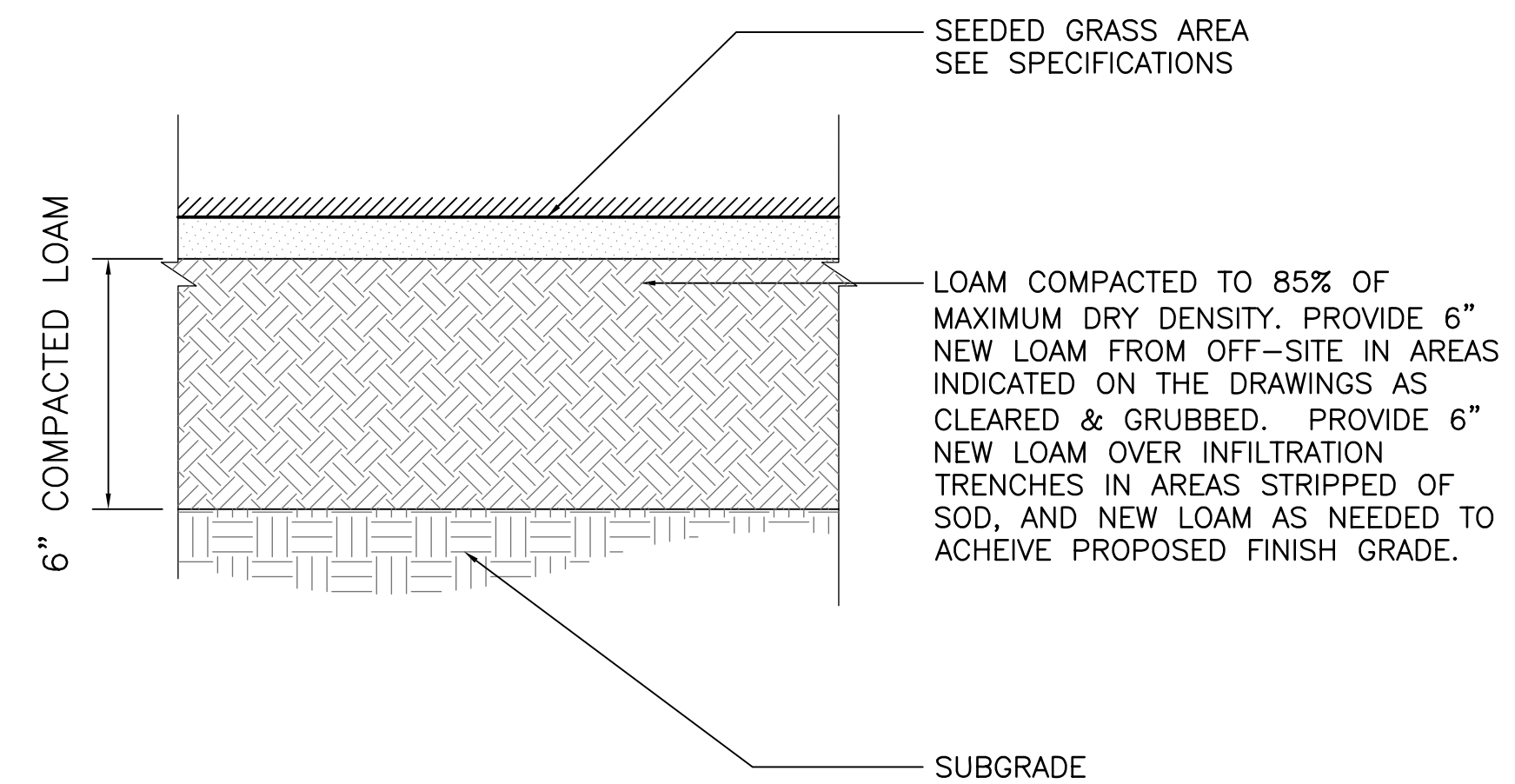
TITLE:
DETAILS

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Project No. 1201.00

DWG No. **L-9**



| SECTION | |
|---------|-----------------------------------|
| 1 | DECIDUOUS TREE PLANTING N.T.S. |



| SECTION | |
|---------|-------------------------|
| 2 | LOAM AND SEED N.T.S. |

Carolyn Cooney & Associates

Landscape Architecture / Planning
19 Elm Street, Milford, MA 01757
Telephone 508 478 8426, Facsimile 508 478 8607

Site Engineering Consultants, Inc.
55 Grape Shot Road
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REVISIONS



Project:
WALTHAM PARK IMPROVEMENTS PROJECT
MCKENNA PLAYGROUND

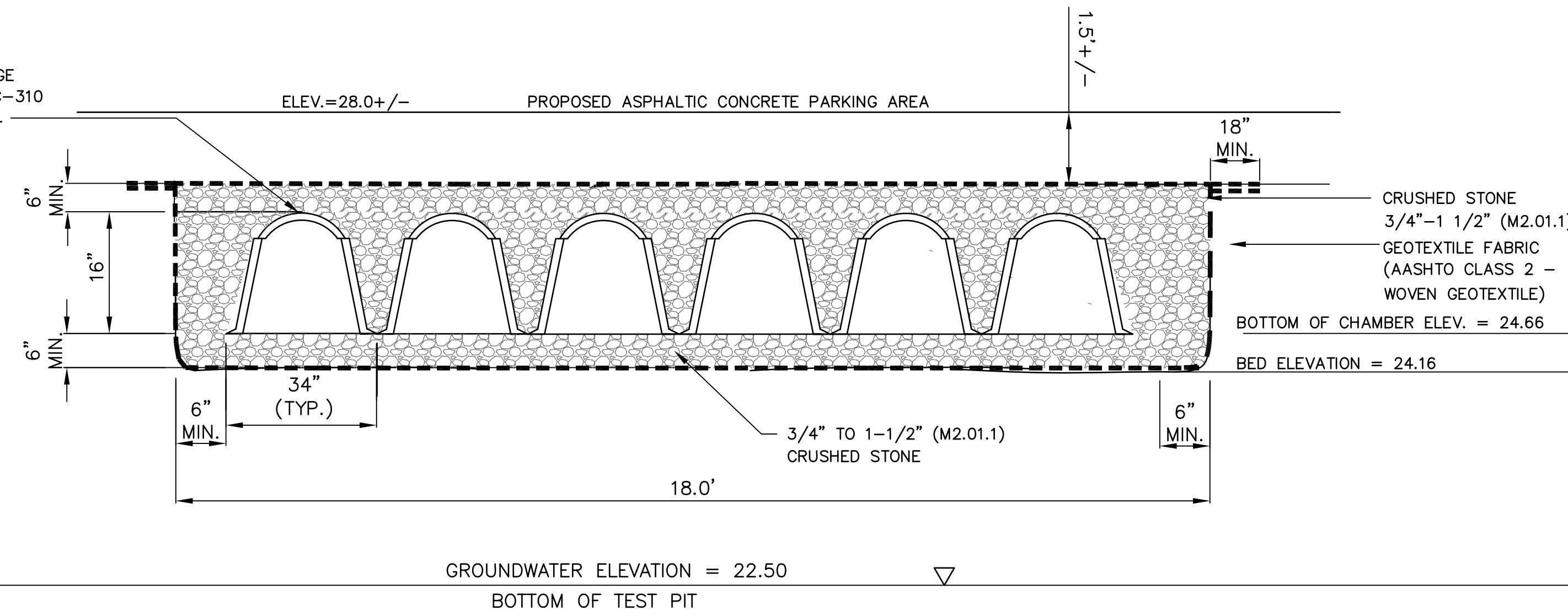
Prepared For:
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119 SCHOOL STREET
WALTHAM, MA 02451

TITLE:
DETAILS

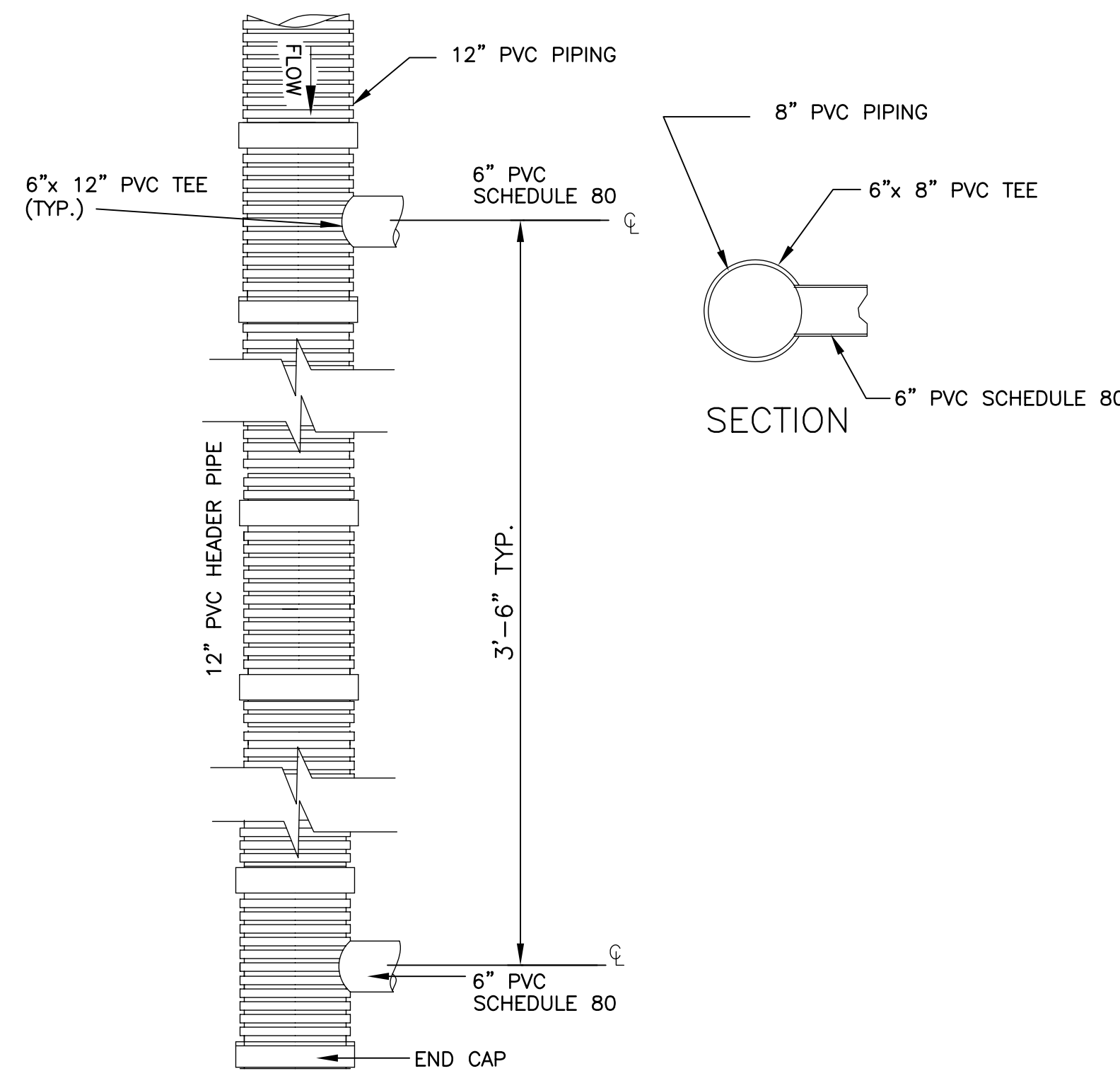
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Project No. 1201.00

DWG No. **L-10**

STORMTECH RECHARGE CHAMBER, MODEL SC-310 OR APPROVED EQUAL



TYPICAL CROSS SECTION



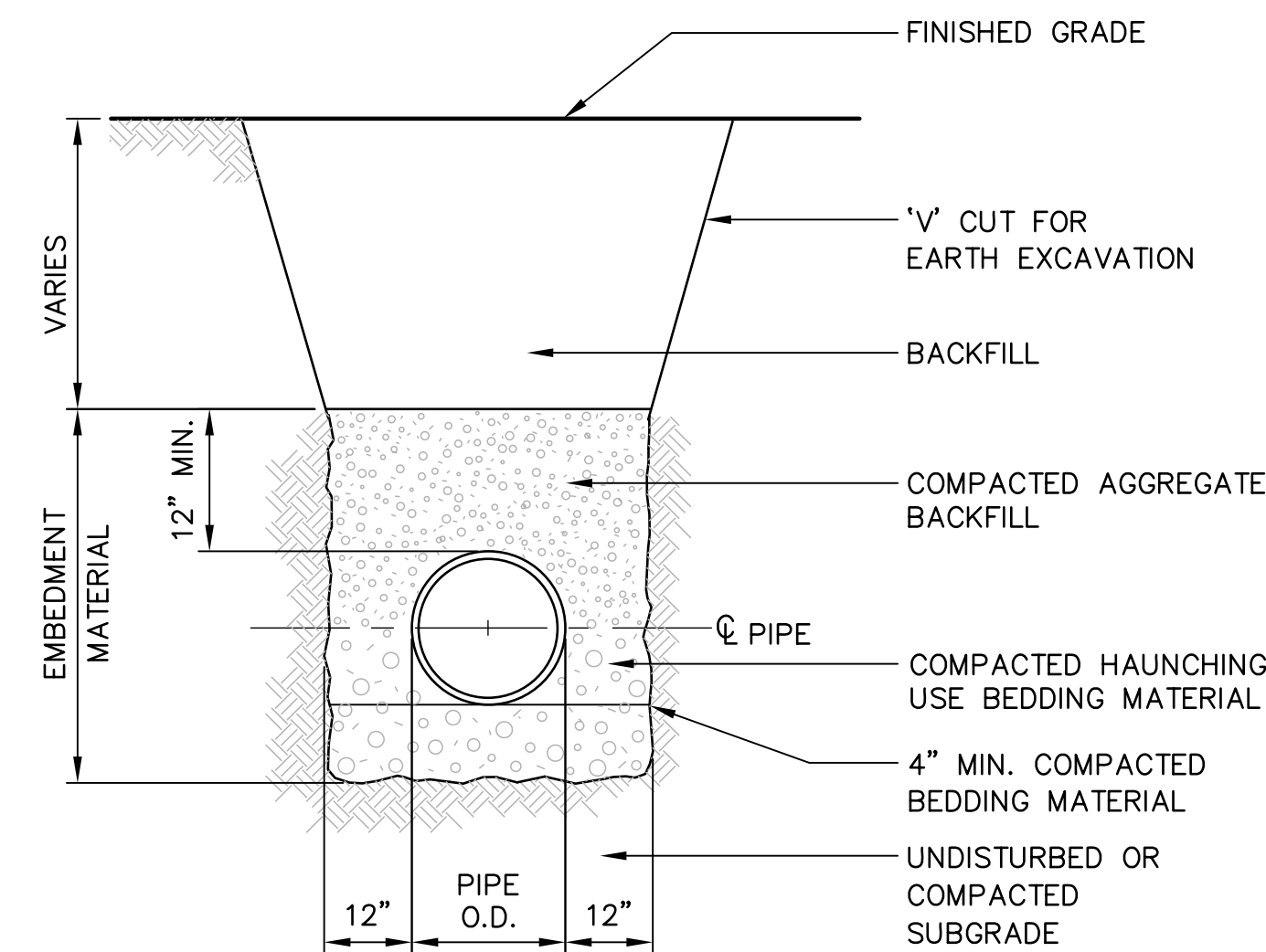
RECHARGE SYSTEM HEADER CONNECTOR

NOT TO SCALE

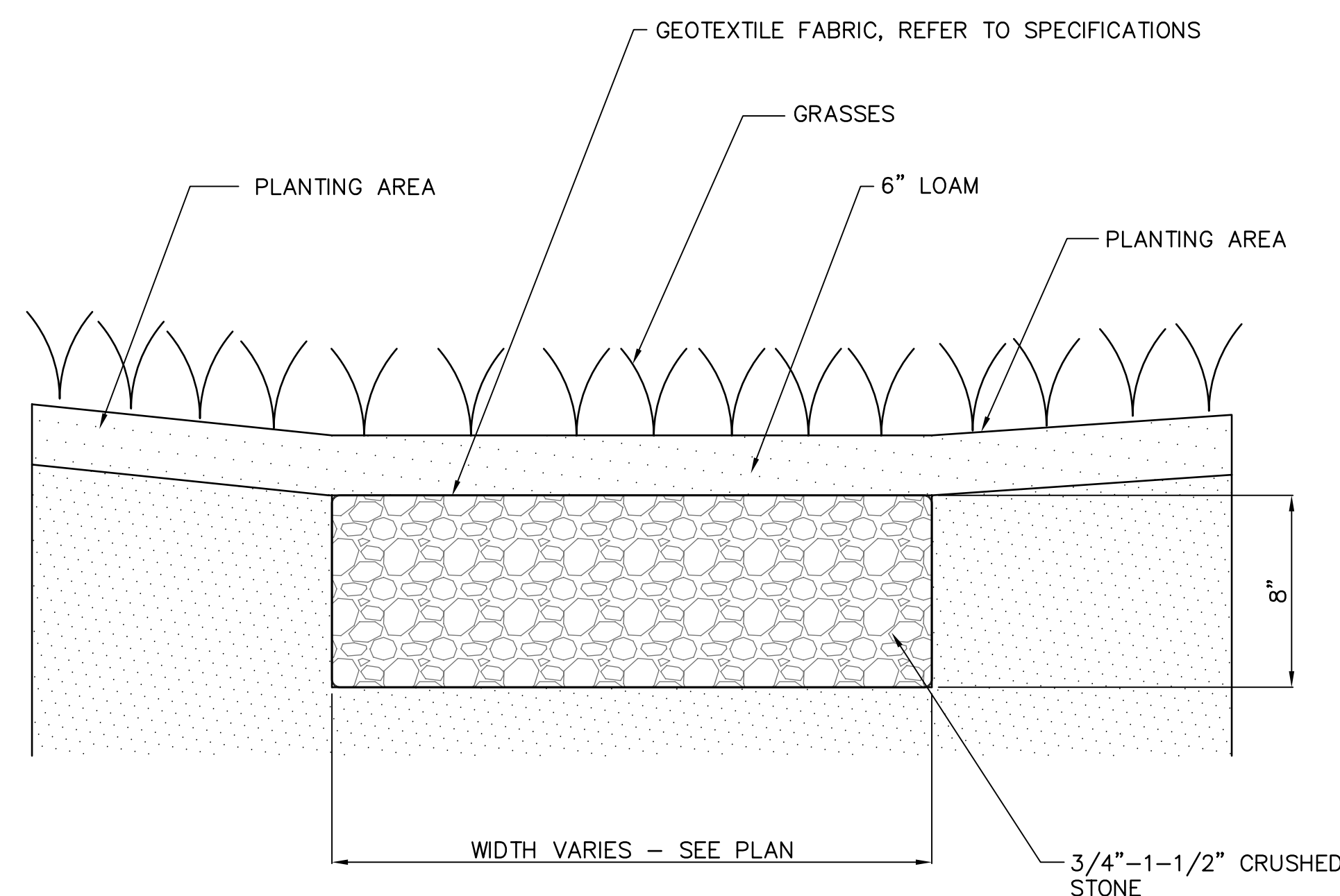
CRUSHED STONE FOR DRAINAGE FOUNDATION

| SQUARE OPENING SIEVE | M2.01.1 1-1/2 IN. |
|----------------------|-------------------|
| — | — |
| 2-1/2 IN. | — |
| 2 IN. | 100 |
| 1-1/2 IN. | 95-100 |
| 1-1/4 IN. | — |
| 1 IN. | 35-70 |
| 3/4 IN. | 0-25 |
| 5/8 IN. | — |

6 STORMWATER RECHARGE SYSTEM DETAIL, TYP. N.T.S.

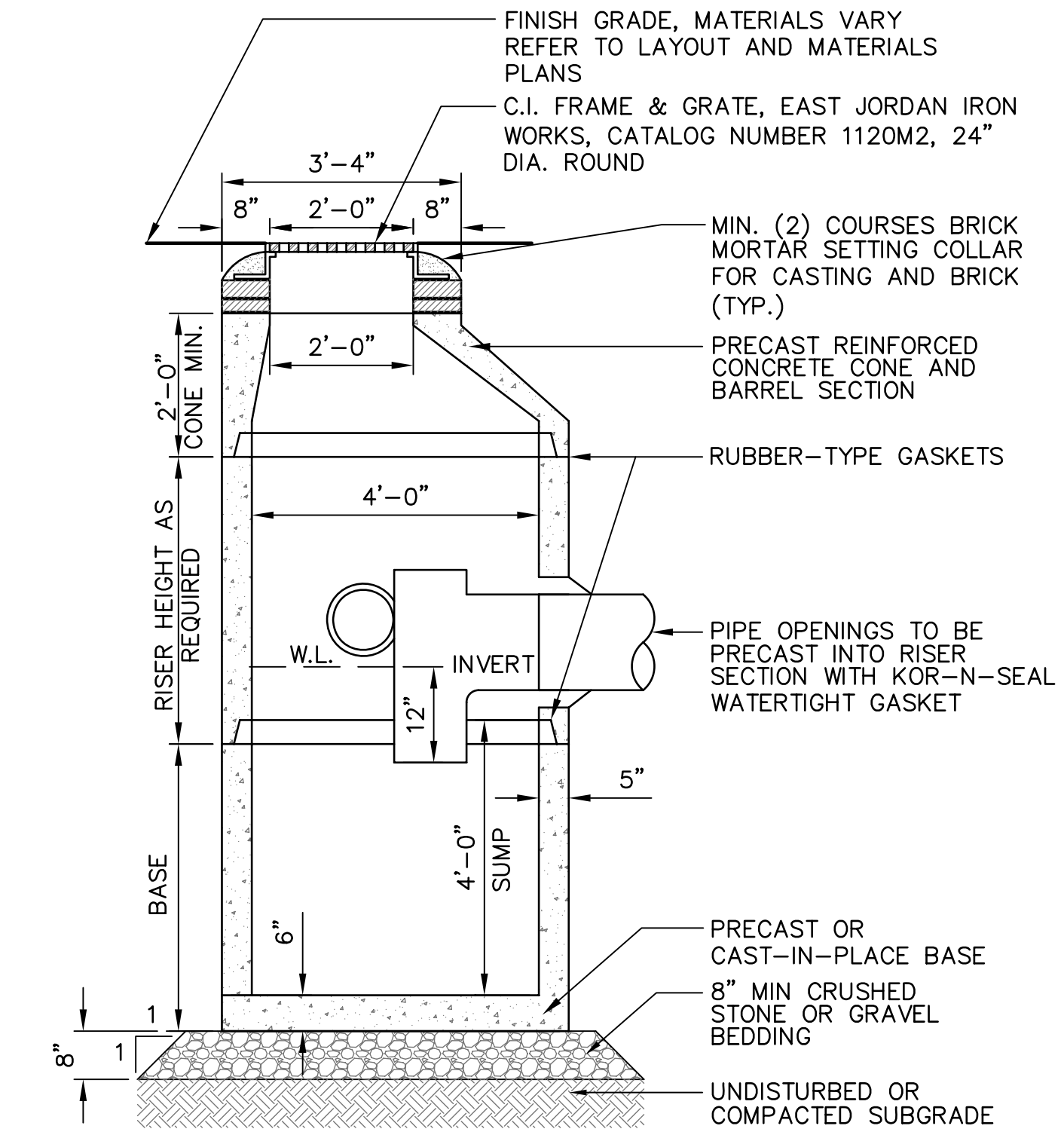


4 STORM DRAIN PIPE TRENCH DETAIL, TYP. N.T.S.

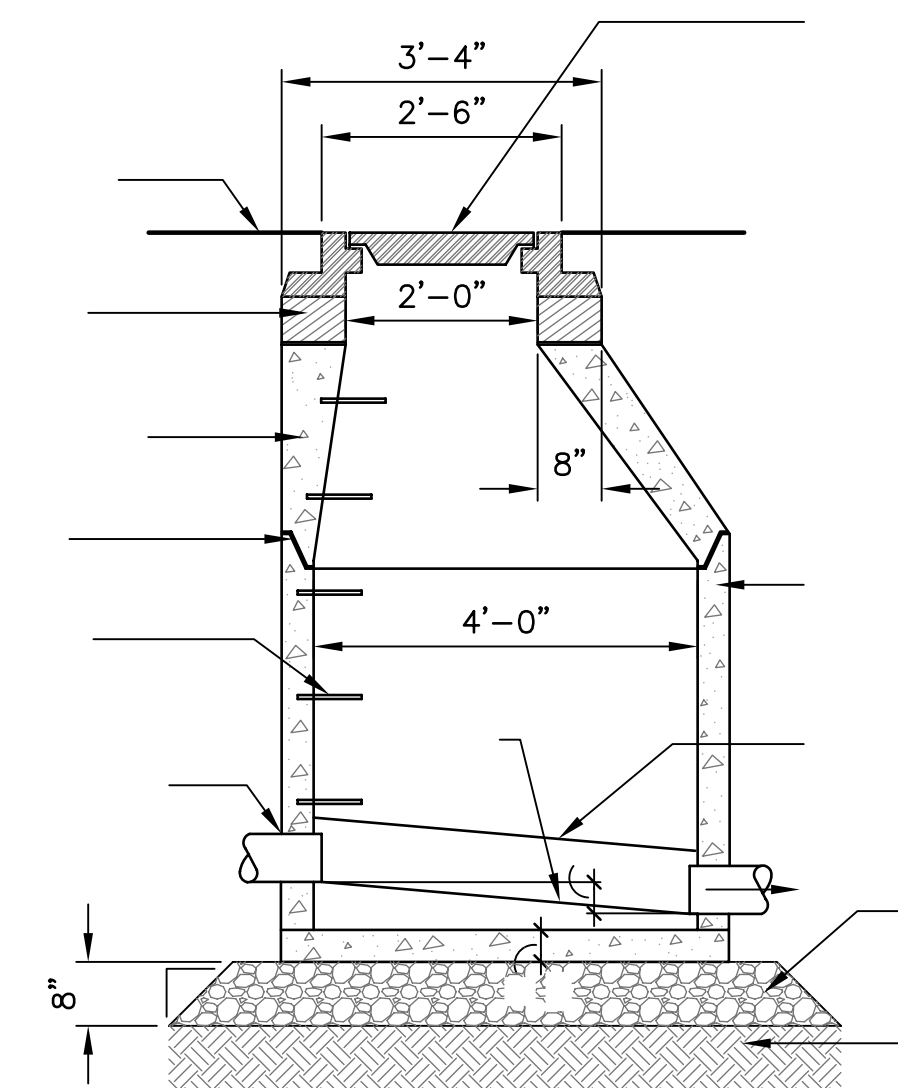


5 INFILTRATION TRENCH DETAIL N.T.S.

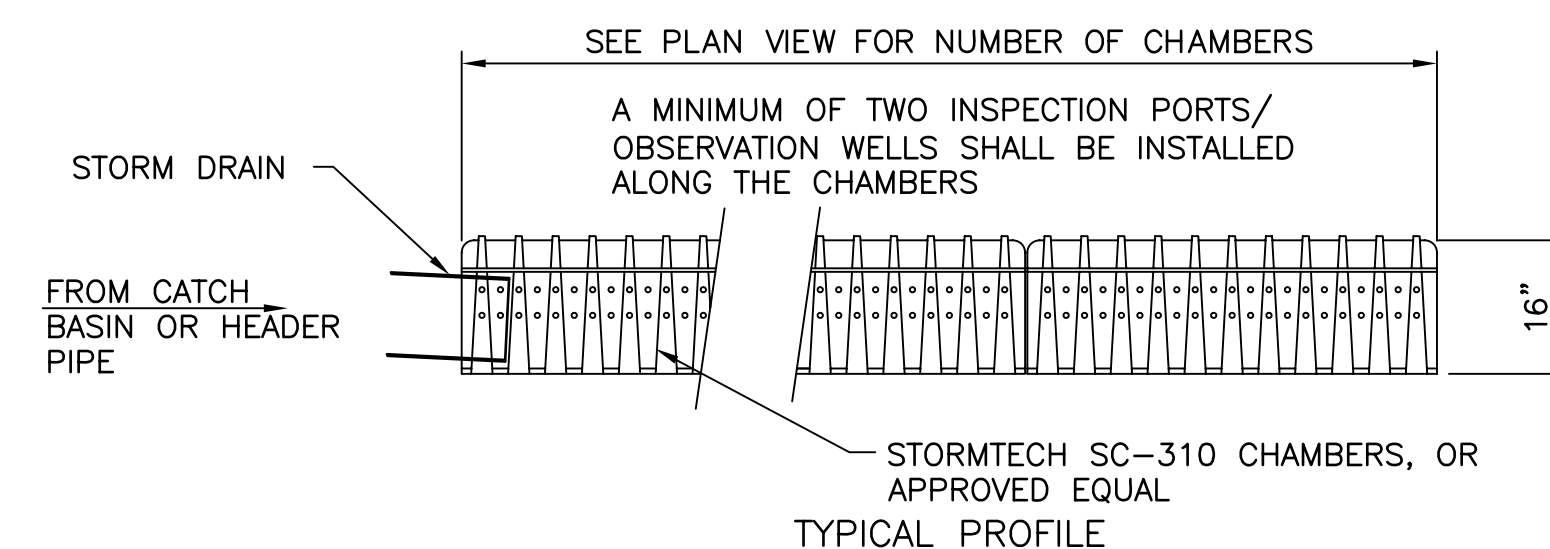
NOTE:
H-20 DESIGNED PRECAST CONCRETE STRUCTURE
4000 PSI, 0.12 SQ. IN./LF AT WALLS AND BOTH
WAYS AT BOTTOM



1 DEEP SUMP (GAS TRAP) CATCH BASIN DETAIL, TYP. N.T.S.



3 STORMWATER RECHARGE UNIT DETAIL, TYP. N.T.S.



3 STORMWATER RECHARGE UNIT DETAIL, TYP. N.T.S.

Carolyn Cooney & Associates

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ENGINEERING INC.

ALPHA SURVEYING AND
ENGINEERING INC.

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



| No. | Description | Date |
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REVISIONS



Project:

WALTHAM PARK
IMPROVEMENTS PROJECT

MCKENNA
PLAYGROUND

Prepared For:

WALTHAM PLANNING
DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451

TITLE:

UTILITY DETAILS

Scale AS NOTED Date SEPT 17, 2012

Drawn By TS

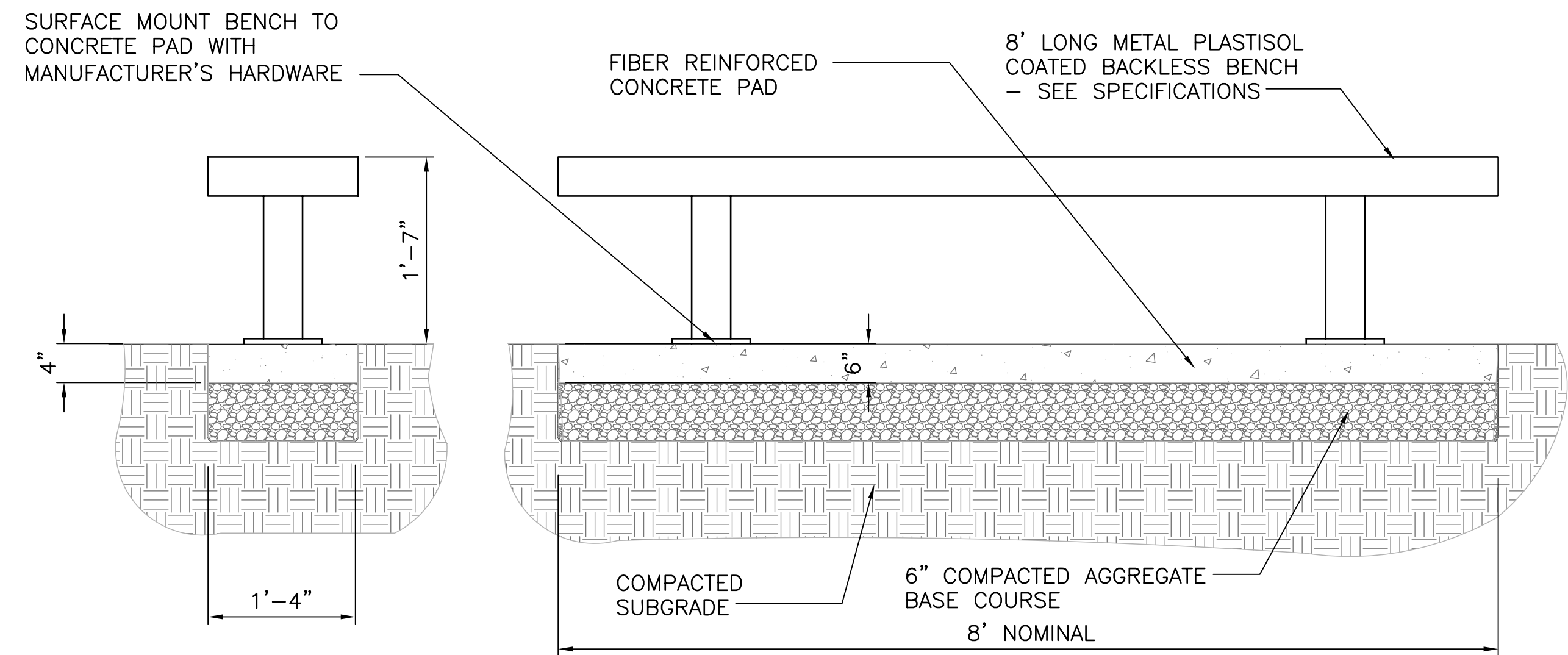
Checked By TS

Approved By CCC

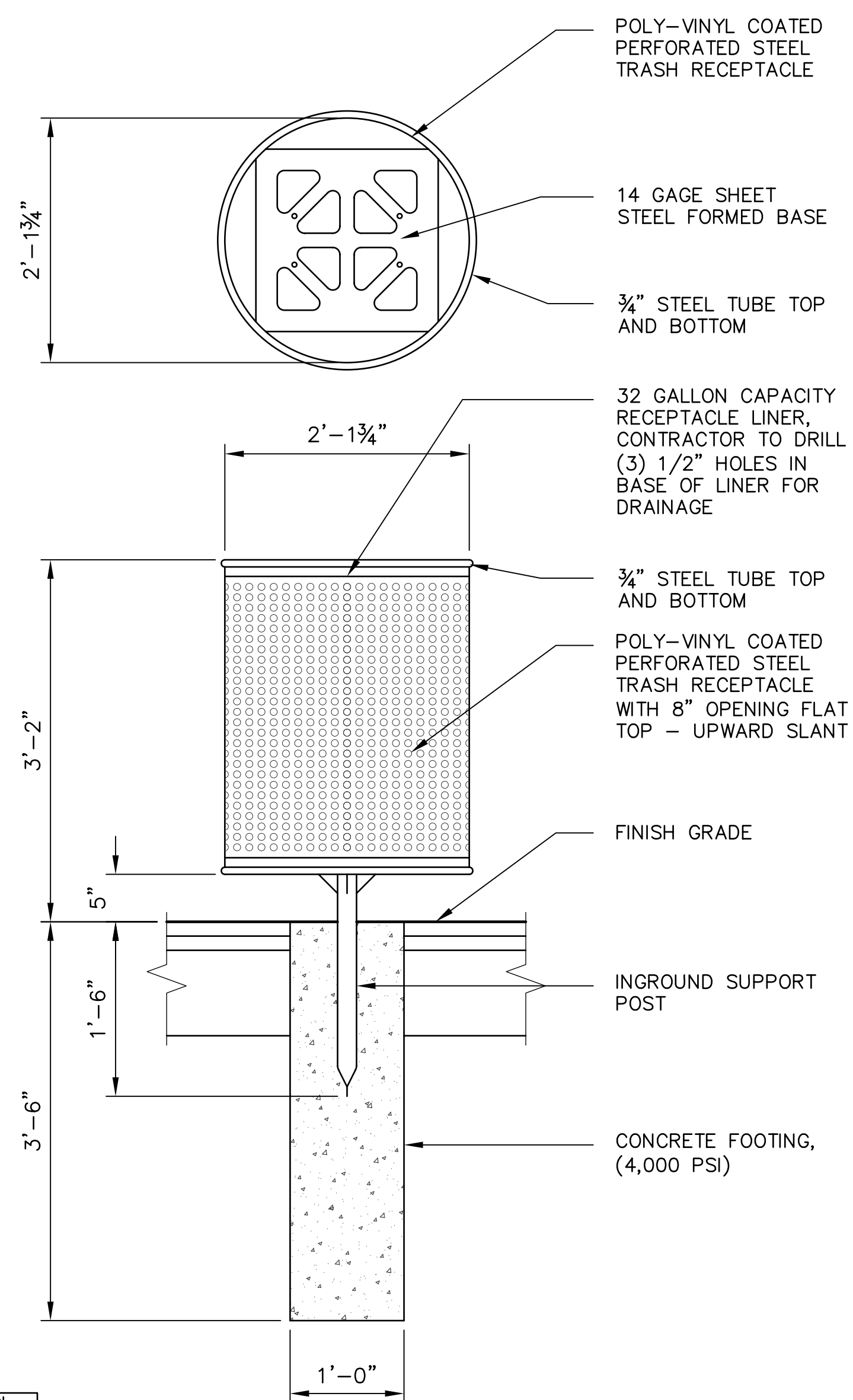
Project No. 1201.00

DWG No.

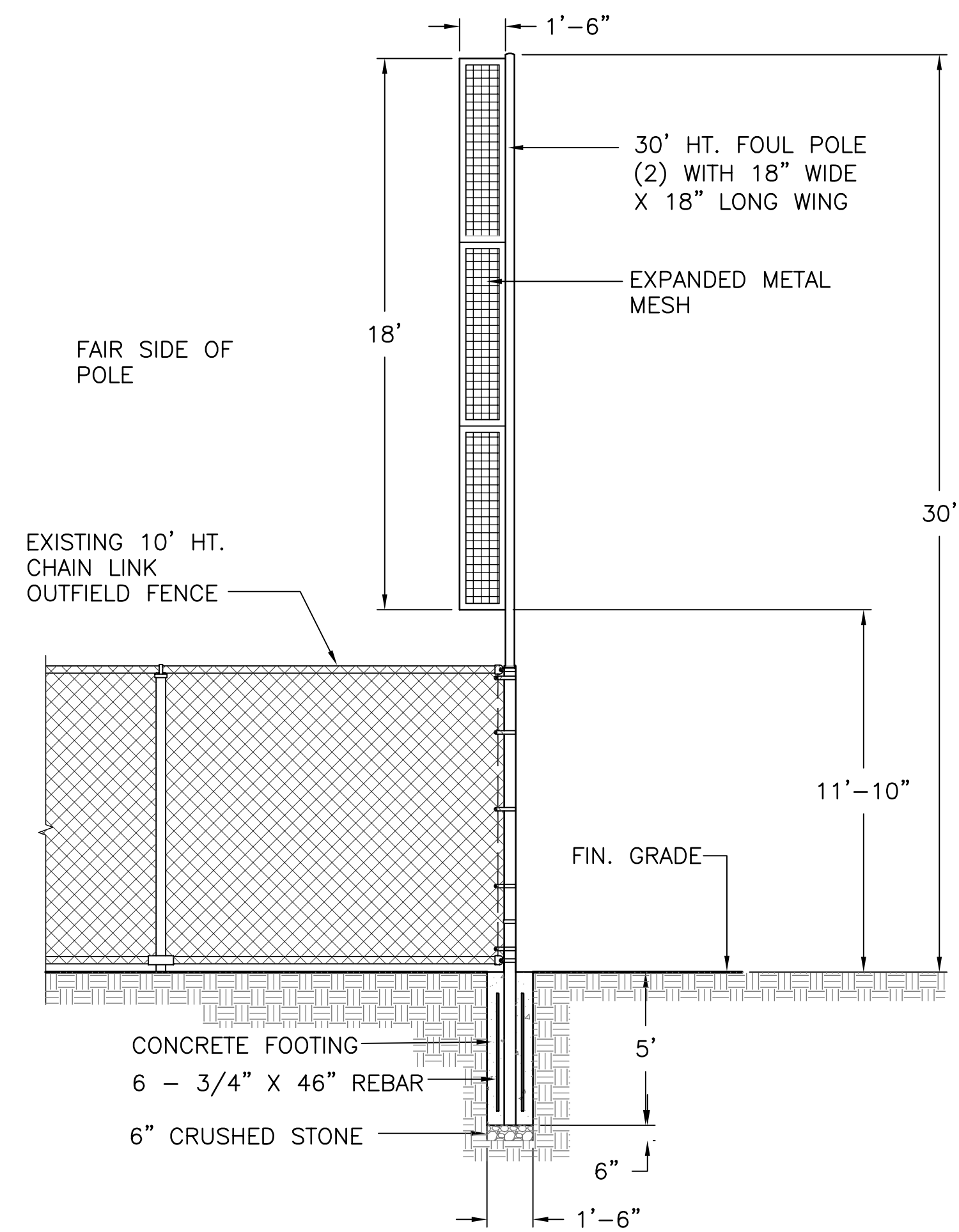
L-11



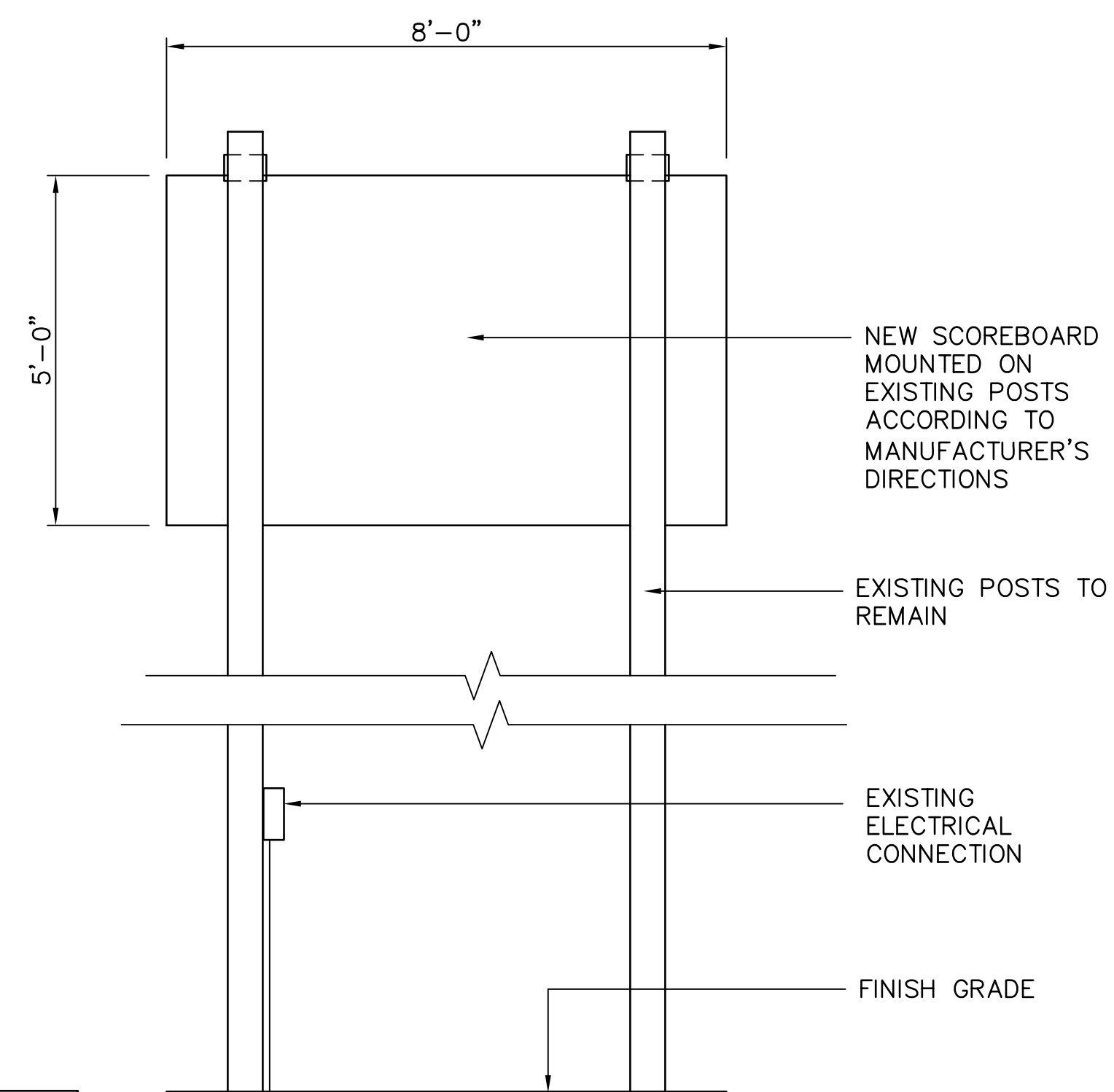
SECTION
1 BACKLESS BENCH DETAIL - ALTERNATE #1
 1" = 1'-0"



SECTION
3 TRASH RECEPTACLE DETAIL, 2 REQUIRED - ALTERNATE #1
 1" = 1'-0"



SECTION
2 30 FOOT FOUL POLE - ALTERNATE #1
 1/4" = 1'-0"



ELEVATION
4 NEW SCOREBOARD ON EXISTING POSTS - ALTERNATE #1
 NTS

Carolyn Cooney & Associates

Landscape Architecture / Planning
 19 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

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REVISIONS



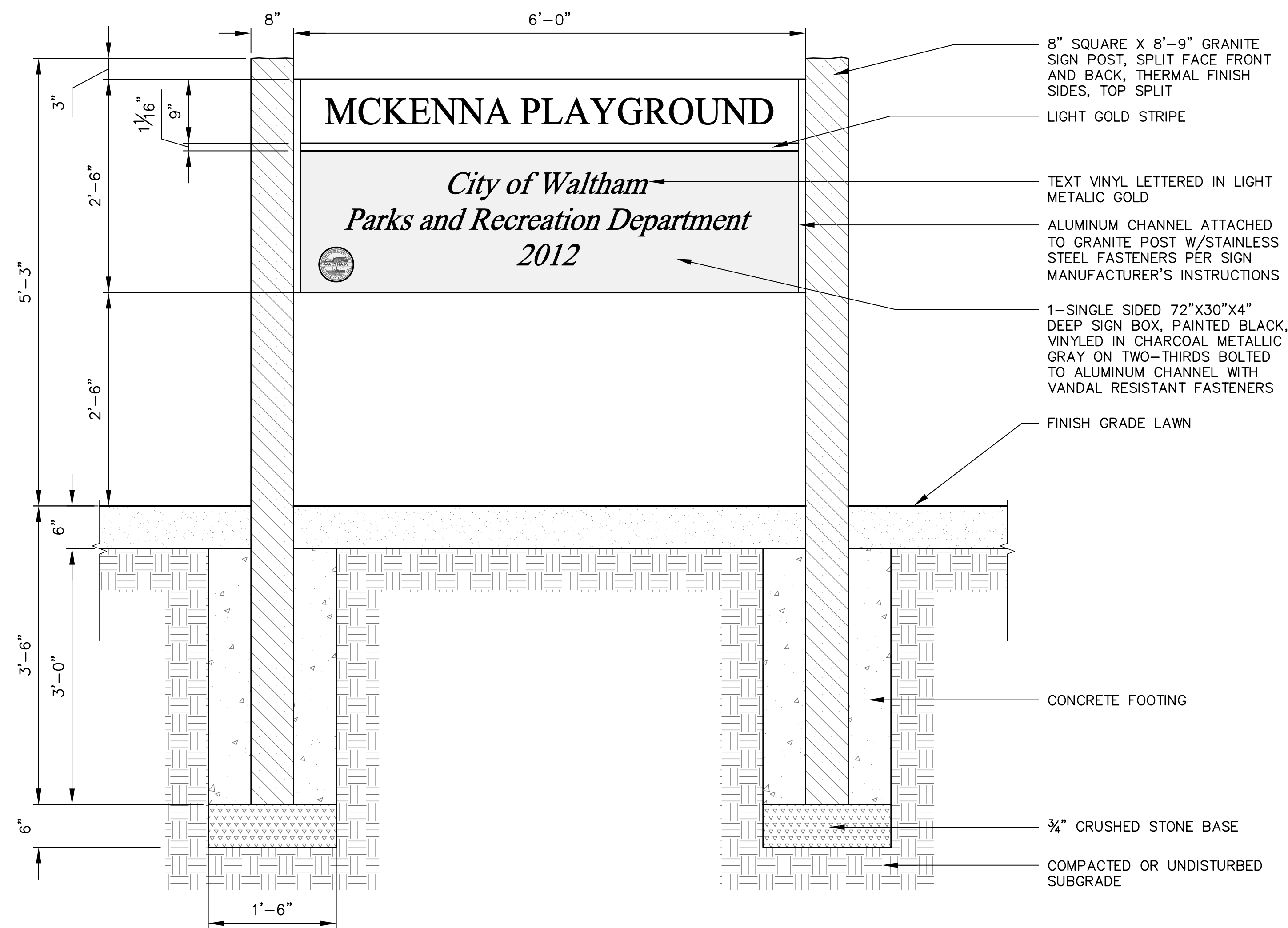
Project:
WALTHAM PARK IMPROVEMENTS PROJECT
MCKENNA PLAYGROUND

Prepared For:
WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451

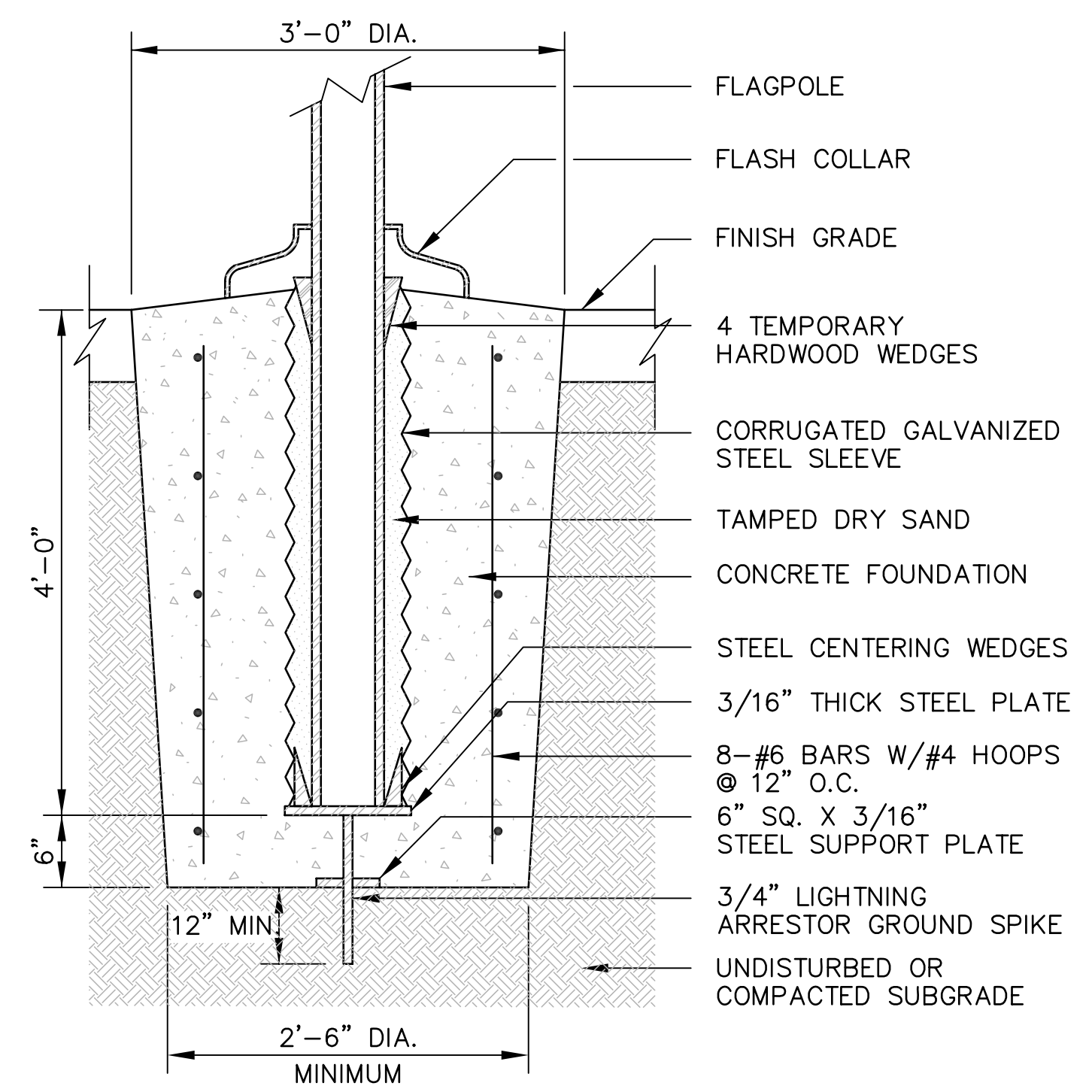
TITLE:
DETAILS ALTERNATES

Scale AS NOTED Date SEPT 17, 2012
 Drawn By CCC
 Checked By DRB
 Approved By DRB
 Project No. 1201.00

DWG No. **L-12**



SECTION
1 EXTERIOR PARK SIGN - ALTERNATE #2
 N.T.S.



SECTION
2 FLAGPOLE FOOTING DETAIL - ALTERNATE #2
 1" = 1'-0"

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REVISIONS

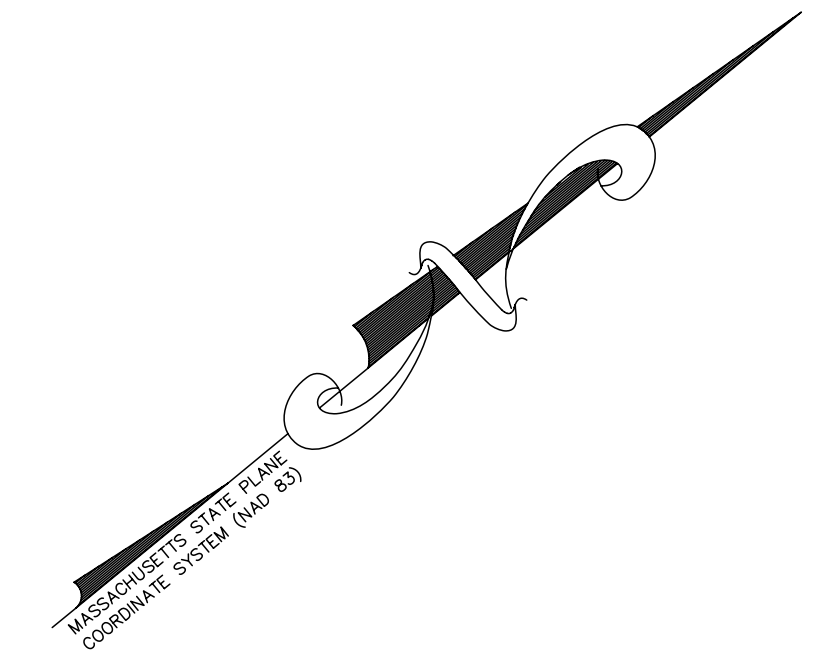
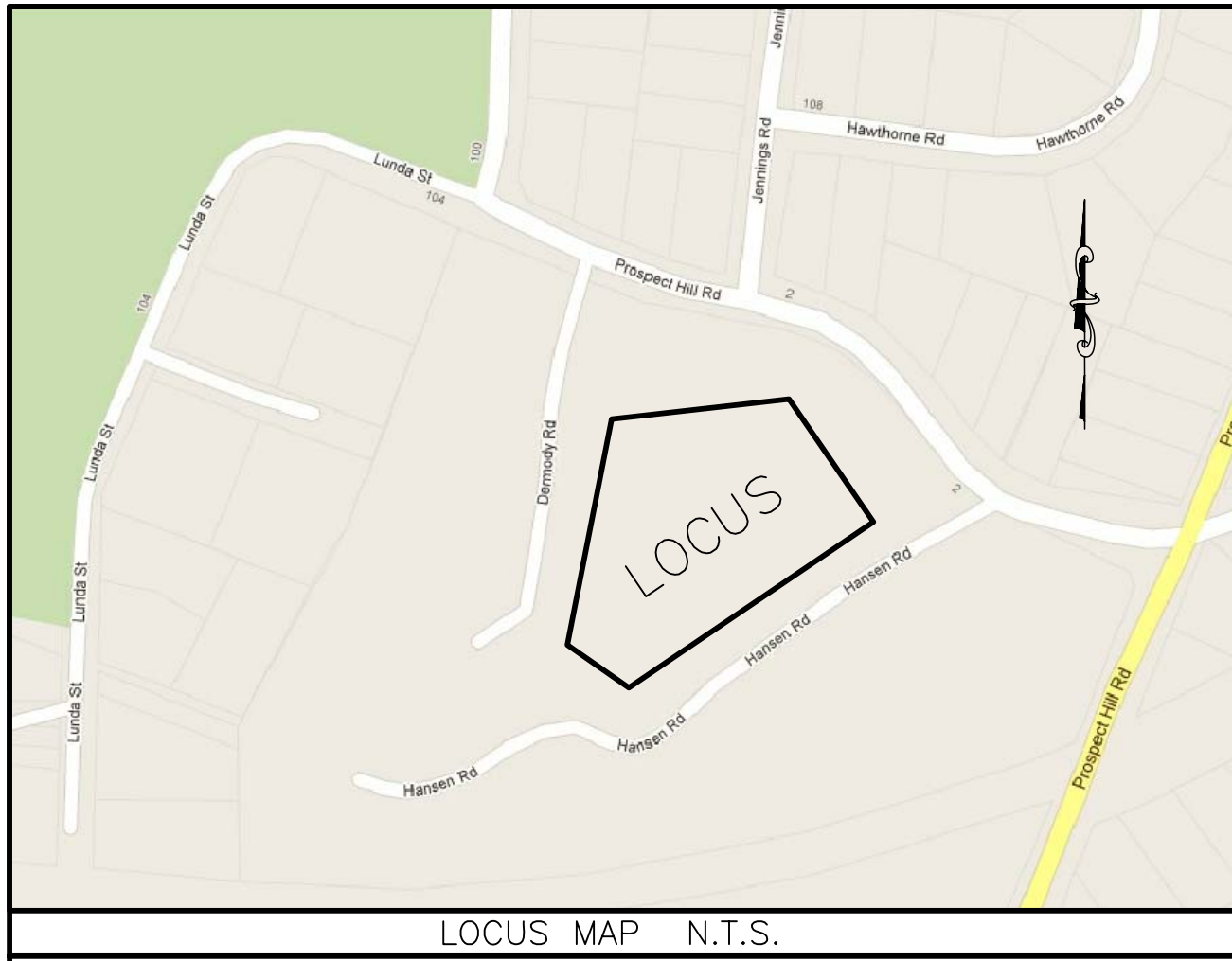
Project:
WALTHAM PARK IMPROVEMENTS PROJECT
MCKENNA PLAYGROUND

Prepared For:
WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451

TITLE:
DETAILS ALTERNATE #2

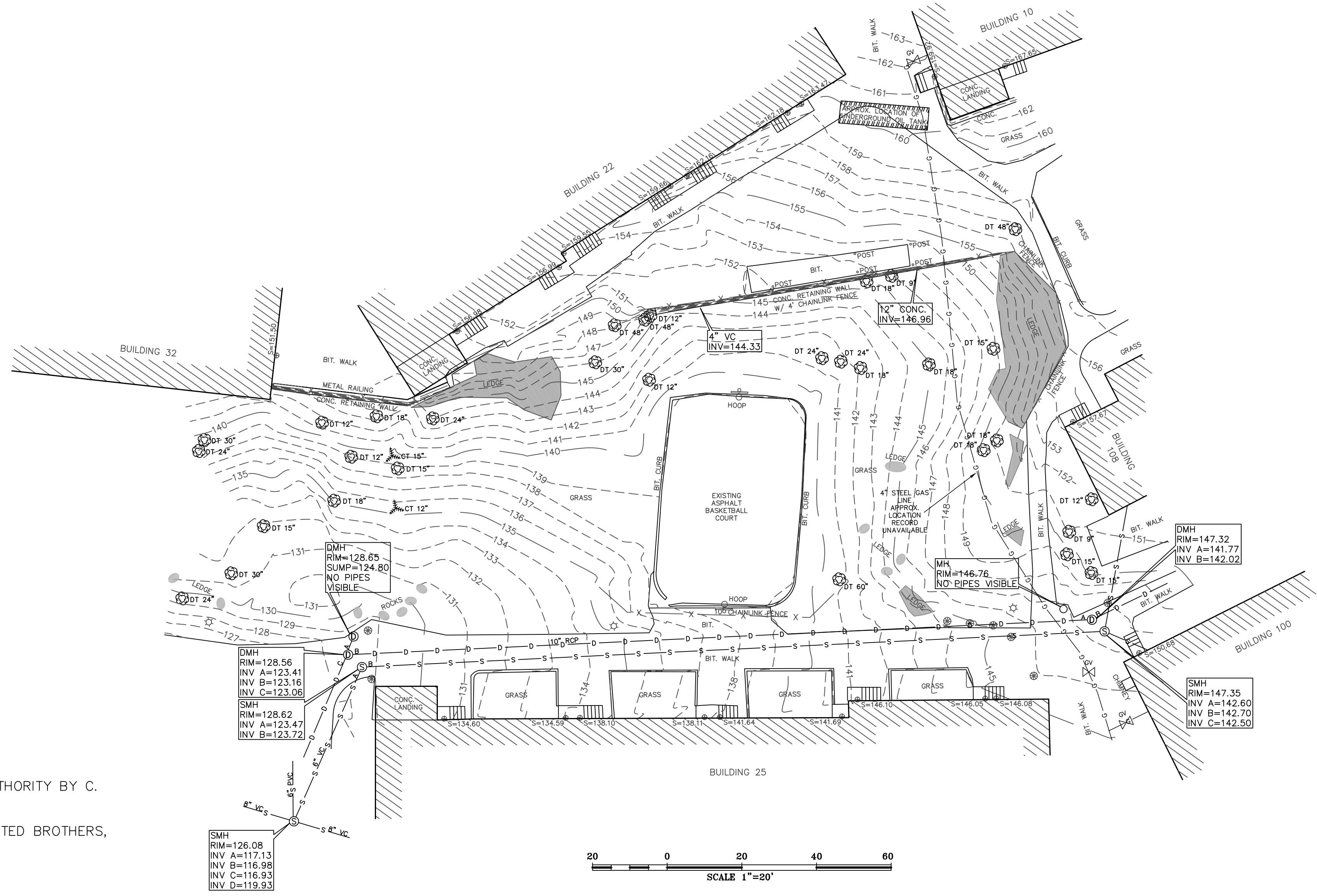
Scale AS NOTED Date SEPT 17, 2012
 Drawn By CCC
 Checked By DRB
 Approved By DRB
 Project No. 1201.00

DWG No. **L-13**



LEGEND

| | | |
|----------------------|--|------------|
| CONIFEROUS TREE: | | CT 8" |
| DECIDUOUS TREE: | | DT 8" |
| GAS GATE: | | |
| FIRE HYDRANT: | | |
| SIGN POST: | | |
| LIGHT POLE: | | |
| WATER GATE: | | |
| WATER MANHOLE: | | |
| SEWER MANHOLE: | | |
| DRAIN MANHOLE: | | |
| CATCH BASIN: | | |
| BOLLARD: | | |
| WATER LINE: | | W |
| GAS LINE: | | G |
| SANITARY SEWER LINE: | | S |
| STORM DRAIN LINE: | | D |
| FENCE: | | X |
| BITUMINOUS: | | BIT. |
| CONCRETE: | | CONC. |
| DOOR SILL: | | ⊙ S=100.00 |



PLAN REFERENCES:

- "SITE PLAN EXISTING CONDITIONS" PREPARED FOR WALTHAM HOUSING AUTHORITY BY C. KITCHELL REVISED JAN. 12, 1974.
- "UTILITIES PLAN" PREPARED FOR WALTHAM HOUSING AUTHORITY BY OLMSTED BROTHERS, SHEET No. U-1 DATED APR. 5, 1949.

UTILITY NOTE:

ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. BEFORE DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACK FILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC & PRIVATE, MUST BE NOTIFIED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS. ALPHA LS ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE FUTURE CONNECTIONS, THE APPROPRIATE UTILITY ENGINEERING DEPARTMENTS MUST BE CONSULTED. CALL "DIG SAFE" AT 1-888-DIG SAFE.

NOTES:

- THE BEARINGS AND DISTANCES AND THE COORDINATES THEY ARE BASED ON SHOWN ON THIS PLAN ARE IN U.S. SURVEY FEET IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, CORS ADJUSTMENT (NAD83/CORS) AS DETERMINED BY GPS OBSERVATIONS MADE BETWEEN THE DATES OF FEB. 22 AND FEB. 23, 2012 USING THE MTS WOBURN CORS SYSTEM.
- ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE BASED ON AN AVERAGE OF 6 OBSERVATIONS AS TAKEN DIRECTLY FROM THE GPS ROVER UNIT FILE.

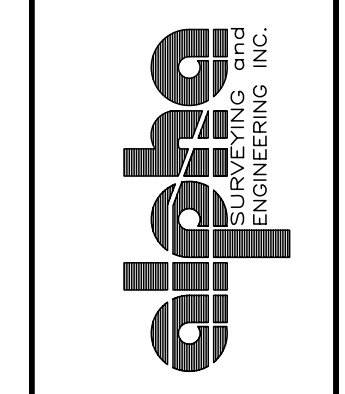
I CERTIFY THE LOCATIONS AND ELEVATIONS SHOWN ON THIS PLAN RESULT FROM AN ACTUAL SURVEY MADE ON THE GROUND ON THE DATE OF FEB. 23, 2012.

REGISTERED PROFESSIONAL LAND SURVEYOR FOR ALPHA SURVEYING & ENGINEERING, INC.

PREPARED FOR
CAROLYN COONEY & ASSOCIATES
 13 ELM ST
 MILFORD, MA 01757

EXISTING CONDITIONS PLAN
PROSPECT HILL TERRACE COURTYARD
WALTHAM, MASSACHUSETTS

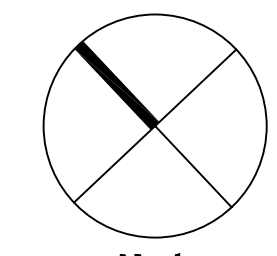

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 MIDDLEBOROUGH, MASSACHUSETTS 02346
 (508) 295-5505



JOB NO. 12102
 SHEET NO. 1 of 1
 DATE 7/28/2012
 DRAWN BY RAB/AMC
 CHECKED BY JEP

| No. | Description | Date |
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REVISIONS

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Project:
**WALTHAM PARK
 IMPROVEMENTS PROJECT**

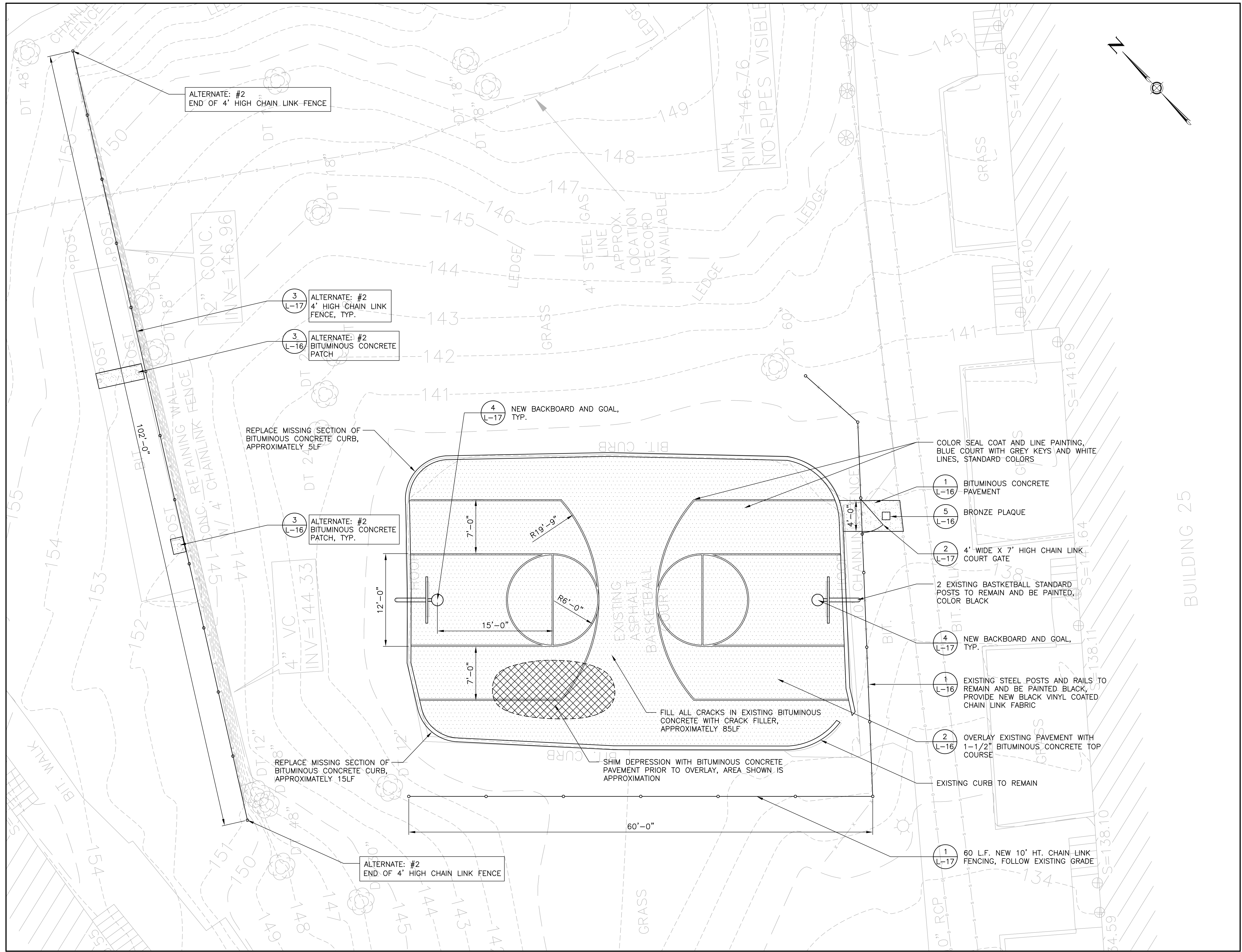
**PROSPECT
 TERRACE**

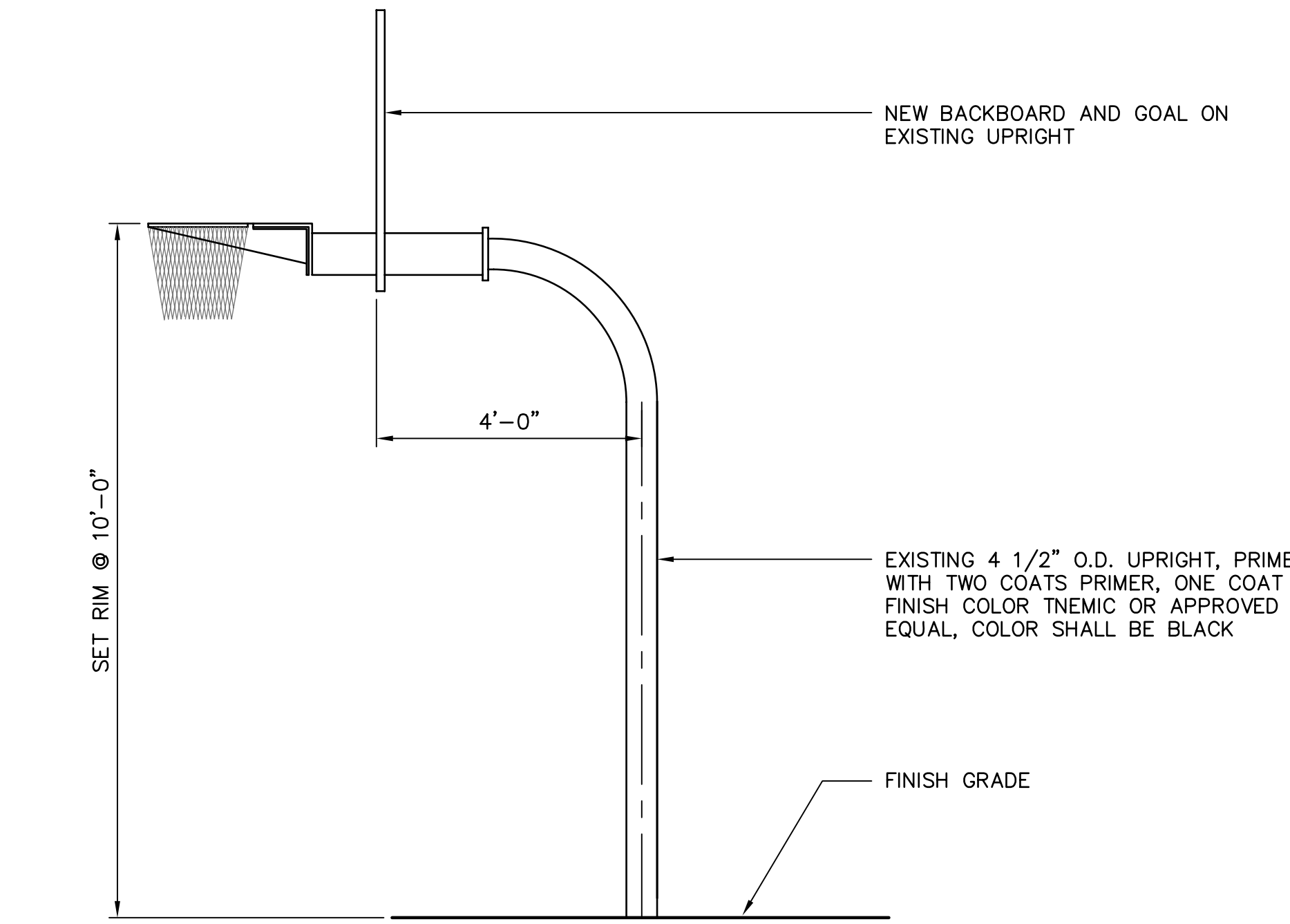
Prepared For:
**WALTHAM PLANNING
 DEPARTMENT
 119 SCHOOL STREET
 WALTHAM, MA 02451**

TITLE:
**LAYOUT AND
 MATERIALS PLAN**

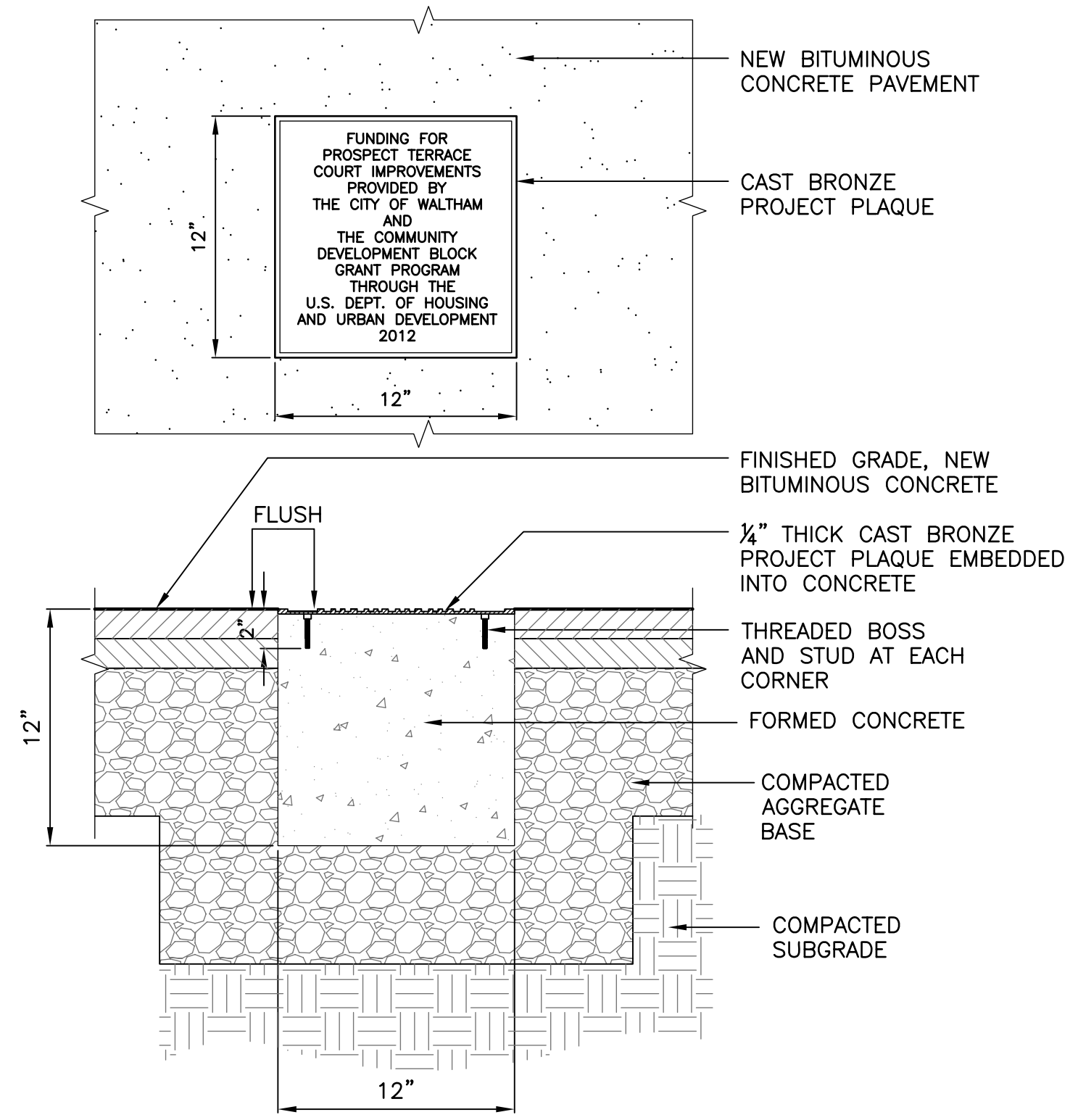
Scale 3/16"=1'-0" Date SEPT 17, 2012
 Drawn By DRB
 Checked By CCC
 Approved By CCC
 Project No. 1201.00

DWG No. **L-15**

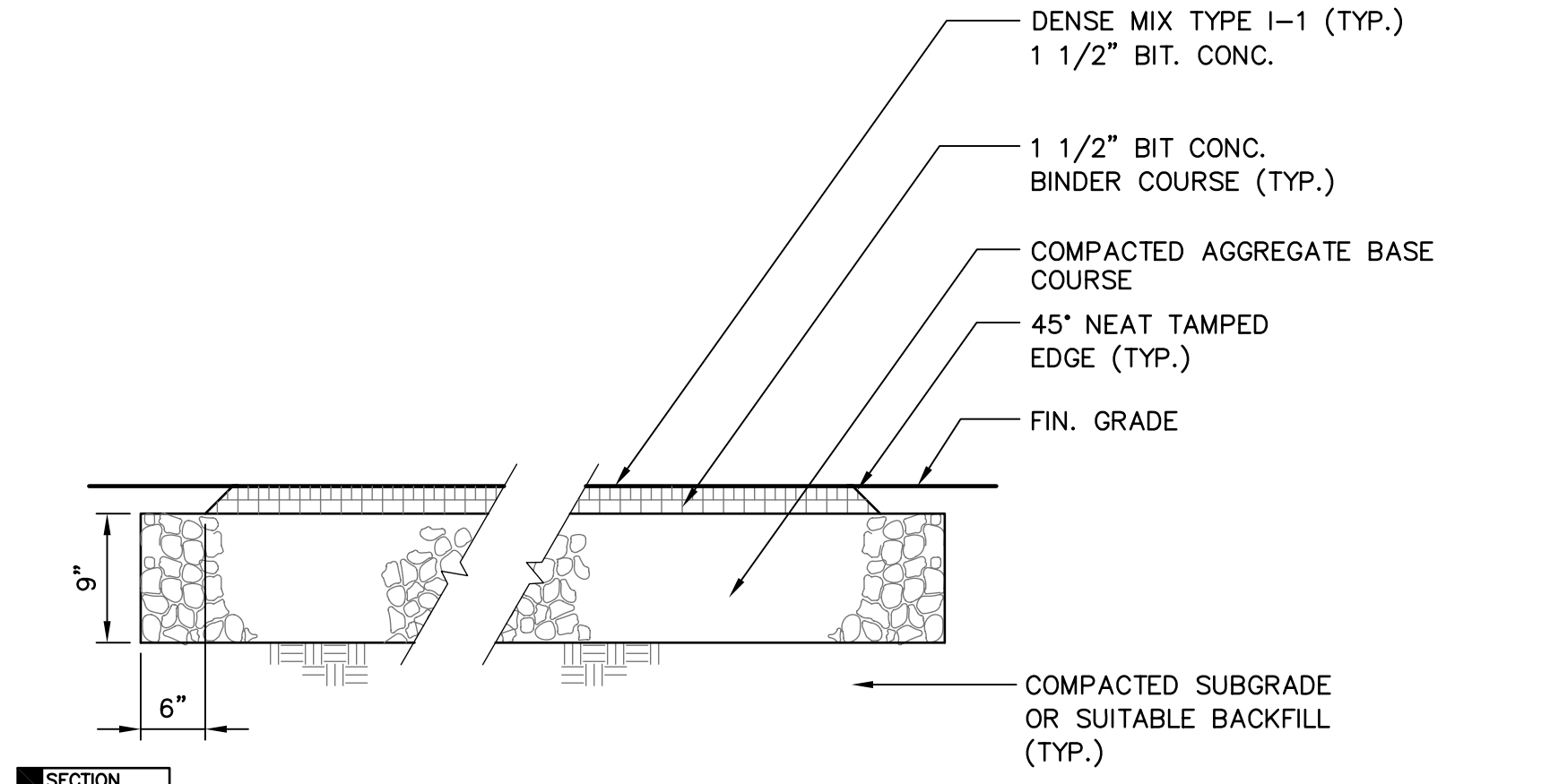




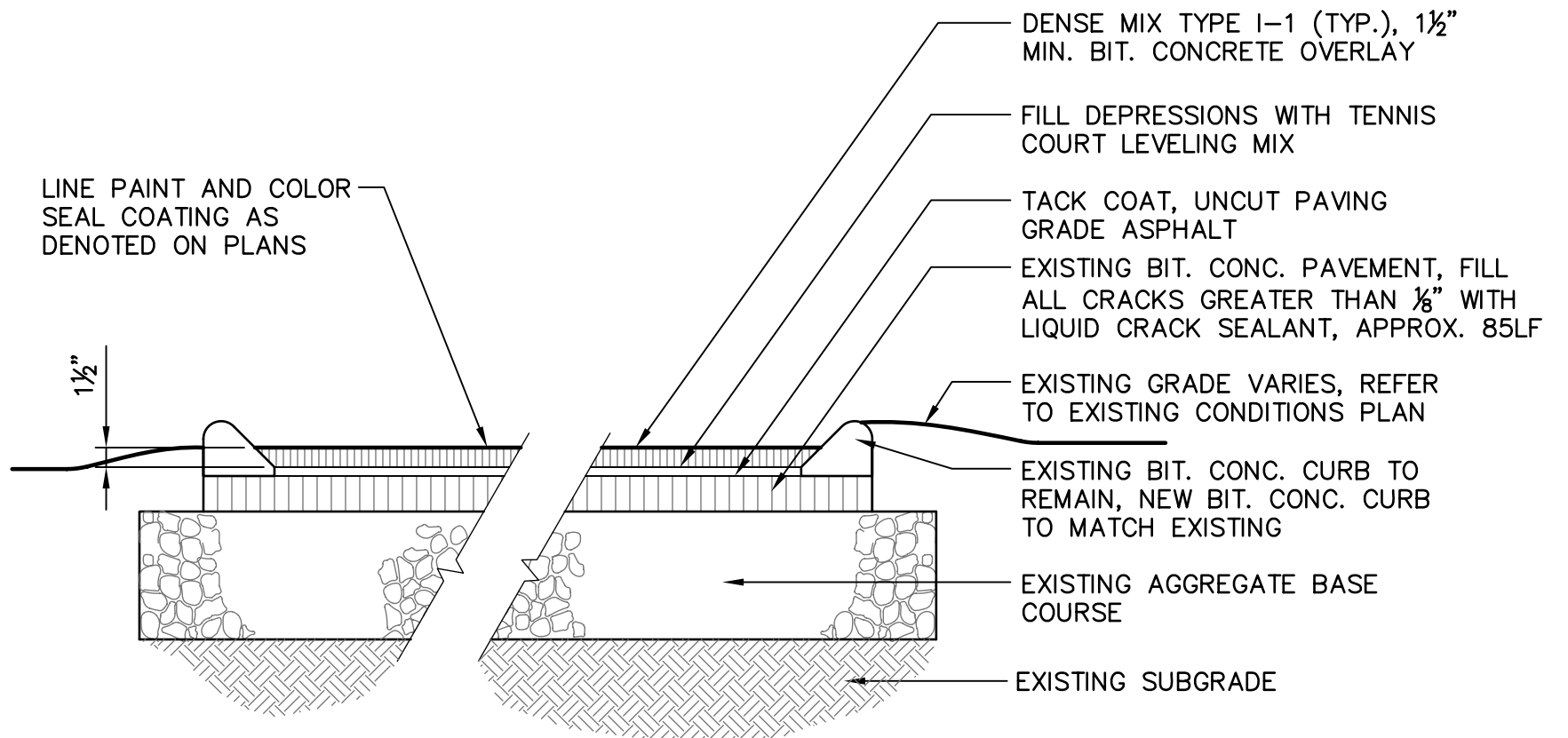
4 BASKETBALL UPRIGHT WITH BACKBOARD AND GOAL, TYP.
SCALE: 1/2" = 1'-0"



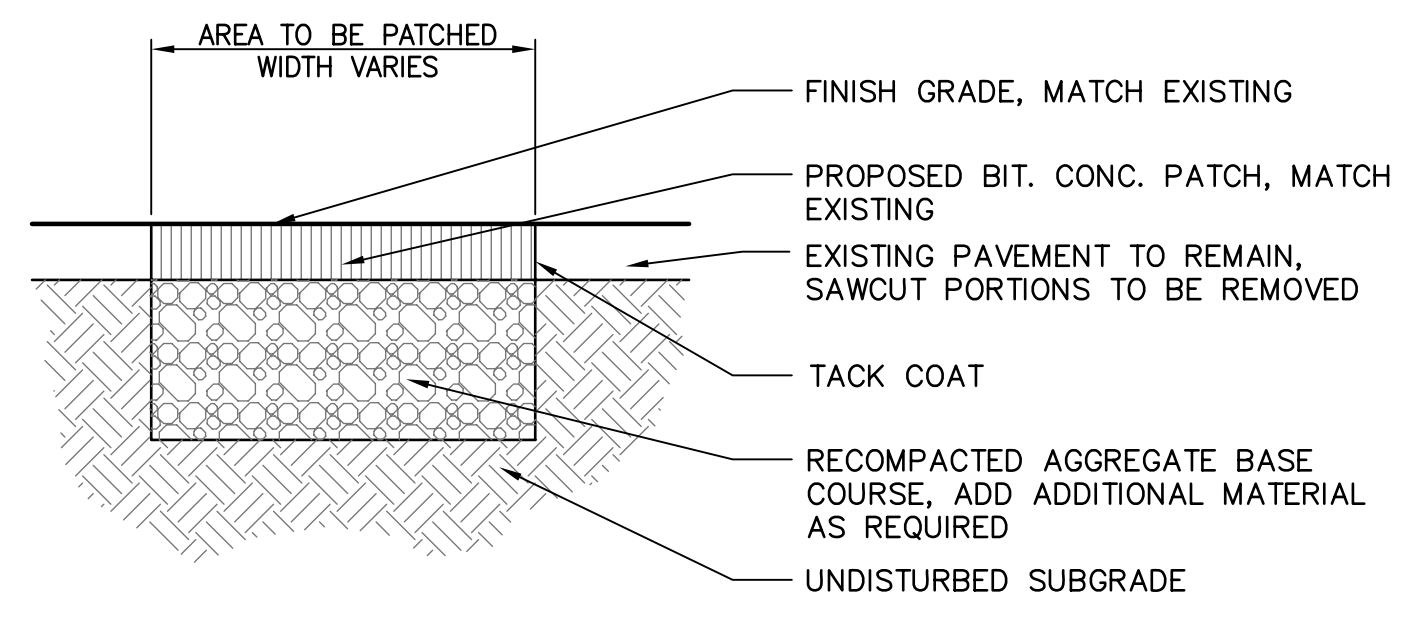
5 BRONZE PLAQUE
NOT TO SCALE



1 BITUMINOUS CONCRETE PAVEMENT DETAIL
N.T.S.



2 BITUMINOUS CONCRETE OVERLAY DETAIL, TYP.
N.T.S.



3 BITUMINOUS CONCRETE PAVING PATCH DETAIL, TYP. - ALTERNATE #2
N.T.S.

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| REVISIONS | |
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Project:
WALTHAM PARK IMPROVEMENTS PROJECT

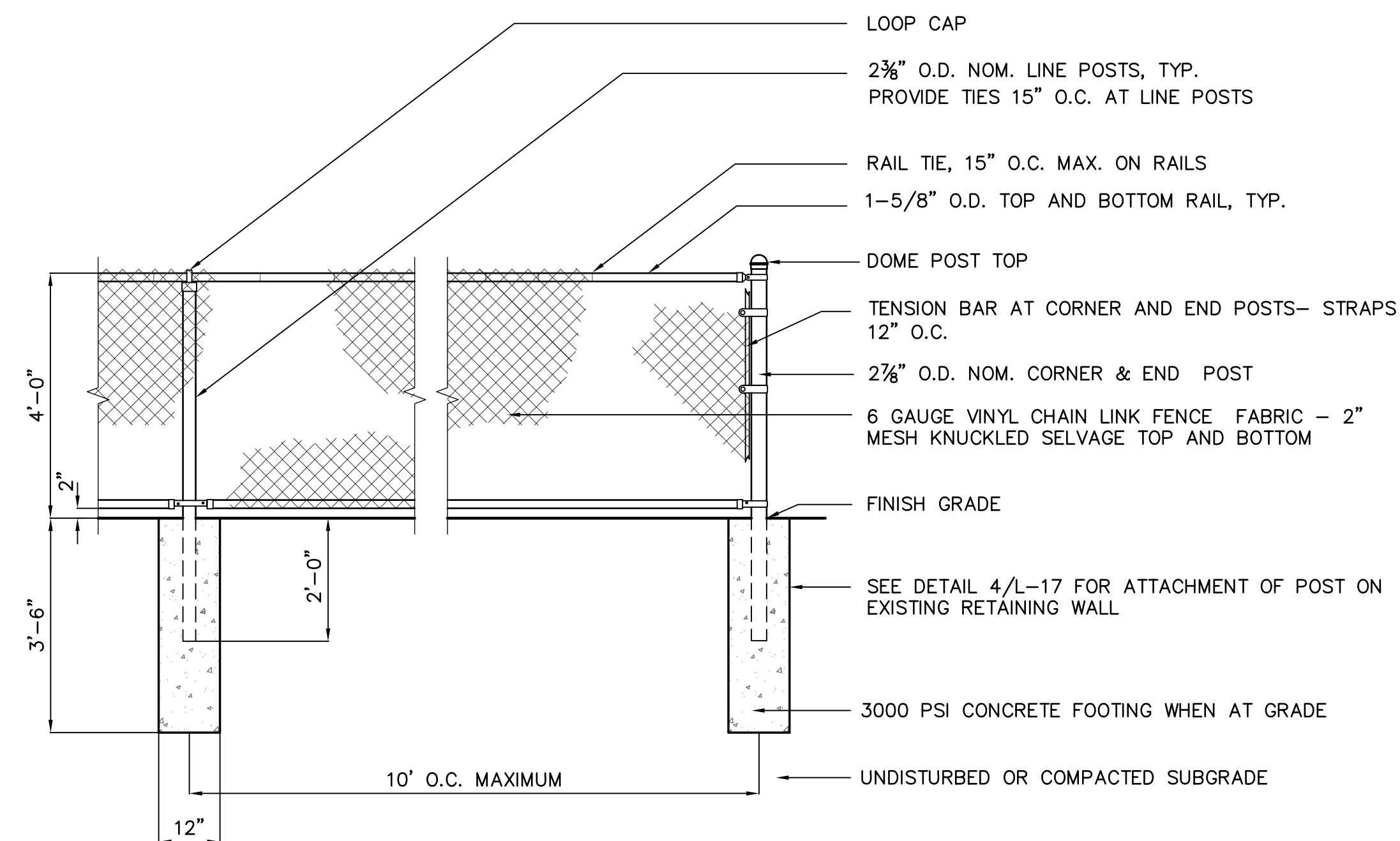
PROSPECT TERRACE

Prepared For:
**WALTHAM PLANNING DEPARTMENT
119 SCHOOL STREET
WALTHAM, MA 02451**

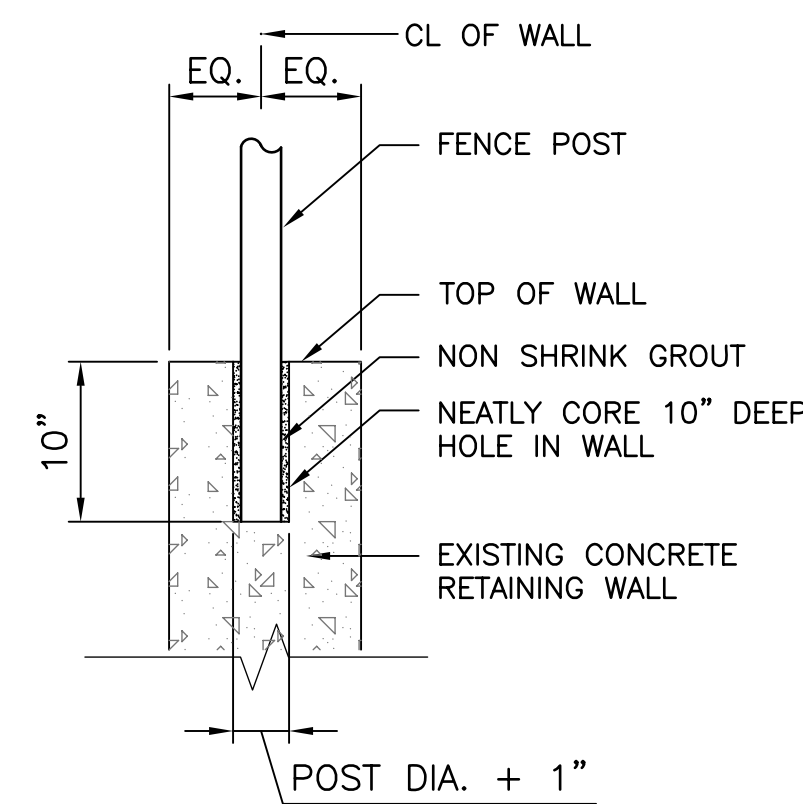
TITLE:
DETAILS

Scale AS NOTED Date SEPT 17, 2012
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Project No. 1201.00

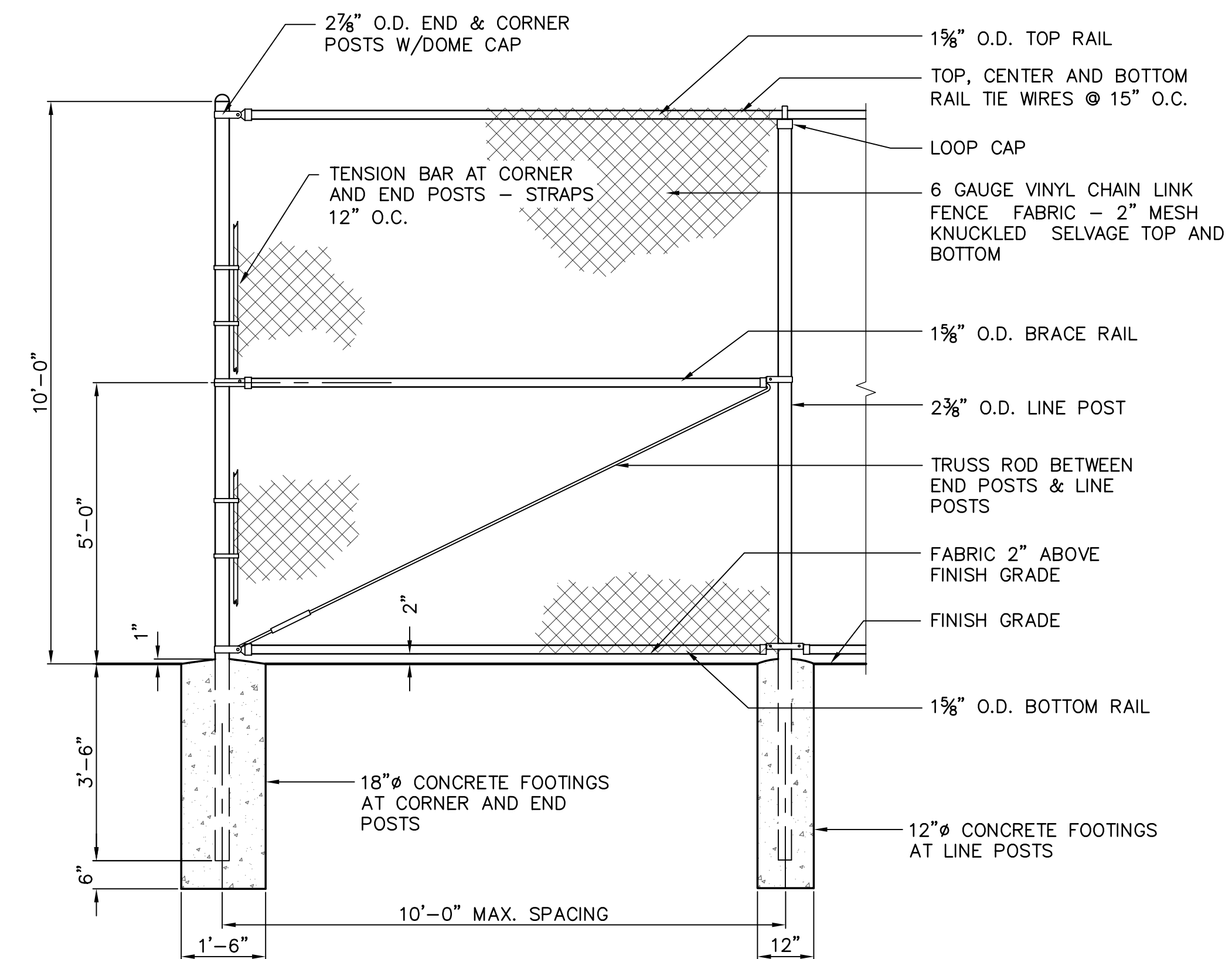
DWG No. **L-16**



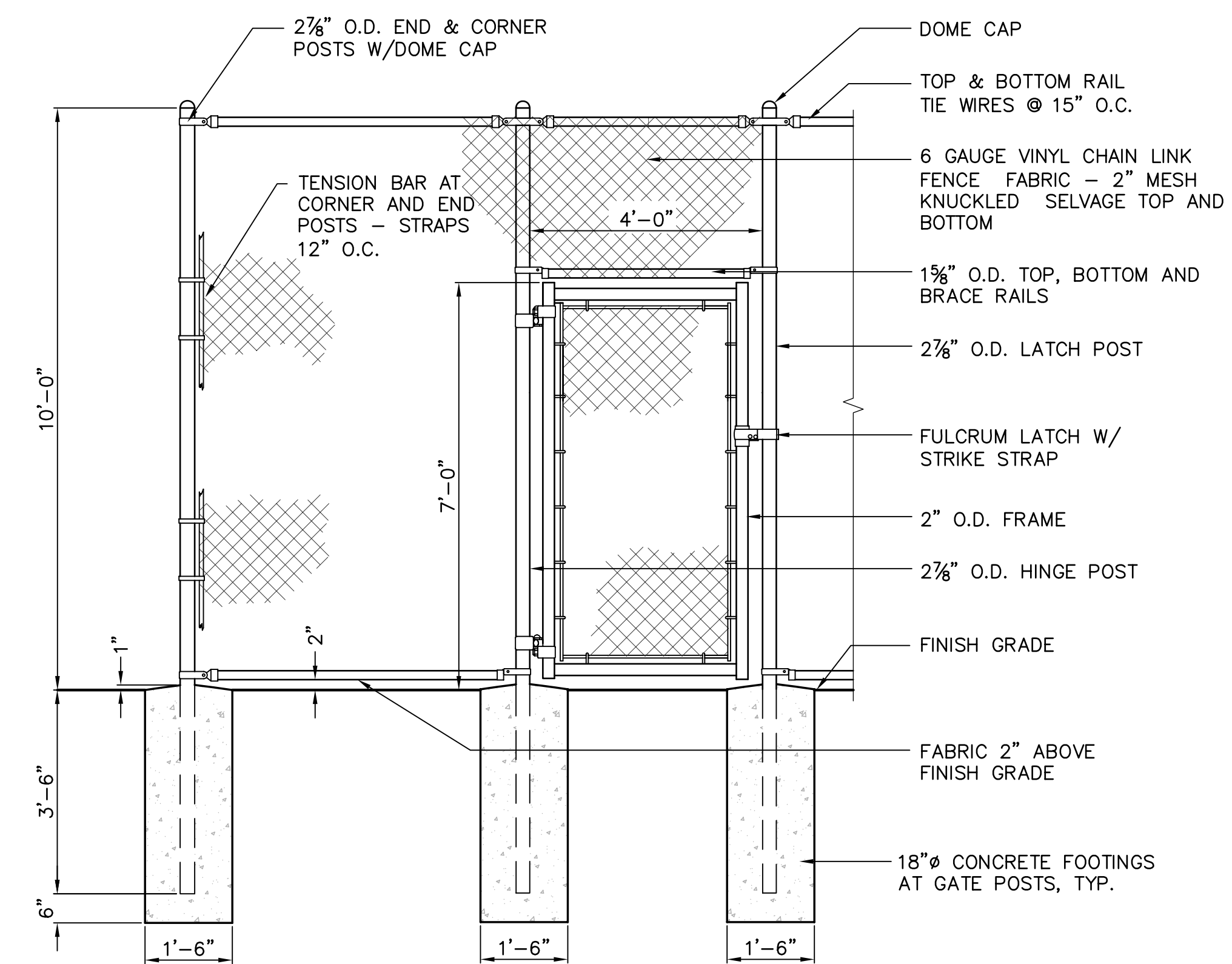
ELEVATION
3 4' HIGH CHAIN LINK FENCE (TYP.) - ALTERNATE #2
 SCALE 1/2"=1'-0"



ELEVATION
4 4' HIGH CHAIN LINK FENCE POST SET IN CONC. RETAINING WALL (TYP.) - ALTERNATE #2
 SCALE 1"=1'-0"



ELEVATION
1 10' HIGH CHAIN LINK FENCE (TYP.)
 SCALE 1/2"=1'-0"



ELEVATION
2 7' HIGH CHAIN LINK FENCE GATE (TYP.)
 SCALE 1/2"=1'-0"

| No. | Description | Date |
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REVISIONS



Project:
**WALTHAM PARK
 IMPROVEMENTS PROJECT**

**PROSPECT
 TERRACE**

Prepared For:
**WALTHAM PLANNING
 DEPARTMENT
 119 SCHOOL STREET
 WALTHAM, MA 02451**

TITLE:
DETAILS

Scale AS NOTED Date SEPT 17, 2012
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 Checked By CCC
 Approved By CCC
 Project No. 1201.00

DWG No. **L-17**