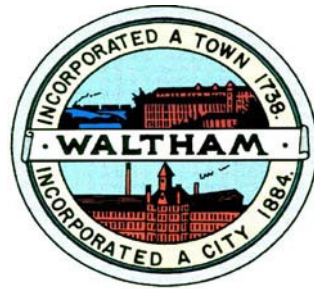


# The City of Waltham



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

## **RECONSTRUCTION OF SPRUCE STREET AND WALNUT STREET PARKING LOTS**

**The bid opening will be held: [Friday November 28, 2014 at 1:00PM](#)**

**Pre-Bid meeting: [Friday November 21, 2014 at 10:00 AM.](#) (Meet at the convergence of Walnut Street Parking Lot and Spruce Street Parking Lot).**

**Last Day for written questions: [12 noon Monday November 24, 2013](#)**

*CITY OF WALTHAM, MASSACHUSETTS*

*TRAFFIC ENGINEERING*

*RECONSTRUCTION OF SPRUCE STREET  
AND WALNUT STREET PARKING LOTS  
WALTHAM, MASSACHUSETTS*

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# CITY OF WALTHAM, MASSACHUSETTS TRAFFIC ENGINEERING

1 – INVITATION TO BID

FOR

RECONSTRUCTION OF SPRUCE STREET AND  
WALNUT STREET PARKING LOTS  
IN WALTHAM, MASSACHUSETTS

SEALED BIDS for RECONSTRUCTION OF SPRUCE STREET AND WALNUT STREET PARKING LOTS will be received by Joseph Pedulla, Chief Procurement Officer, City Hall, 610 Main street Waltham, Massachusetts until **Friday November 28, 2014 at 1:00PM** at which time they will be publicly opened and read.

BIDS shall be received only on the Bid forms provided, properly filled out and placed in a sealed envelope addressed to the Purchasing Agent, Waltham, Massachusetts, and endorsed "BID FOR R" along with the bidder's name.

No Bid will be received unless accompanied by cash or treasurer's check issued by a responsible bank or trust company, or a bid bond for the sum of five percent of the CONTRACTOR'S bid price in favor of the City of Waltham. Should the Bidder selected as the CONTRACTOR on any such work fail to execute the Contract within five days, Sundays and holidays excluded, from the date of mailing a notice to the undersigned at the address given below that the contract is ready for signature, the amount so received as a bid deposit from such bidder through his cash or treasurer's check issued by a responsible bank or trust company, or bid bond shall become and be the property of the said City of Waltham as liquidated damages; provided, that in the case of death, disability or other unforeseen circumstances affecting the bidder, such bid deposit may be returned to him. An award shall then be made to the next lowest responsible and eligible bidder thereon.

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

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

Specifications and blank Bid forms may be obtained at no charge by visiting the City of Waltham web site at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids).

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

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

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

All bidders are hereby notified that the City of Waltham Affirmative action requirements portion of these documents must be filled out prior to the award of the contract. They will be found in section 2B of these documents.

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

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

The responding bidder recognizes receipt of Addenda Number:     ,     ,     ,     ,     ,     ,     .

Please note that this is a **prevailing wages project**. The prevailing wage schedule is on line at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids) . The Contractor is required to submit to the Purchasing Department Office weekly Certified Payrolls and affidavits.

During the bid process all questions shall be directed in writing via e-mail to [jpedulla@city.waltham.ma.us](mailto:jpedulla@city.waltham.ma.us).

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

SECTION 2A

CITY OF WALTHAM  
RESIDENTS CONSTRUCTION EMPLOYMENT PROGRAM

Please see City of Waltham Ordinances.

## SECTION 2B

### CITY OF WALTHAM AND FEDERAL EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION REQUIREMENTS

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

#### **The City Of Waltham Equal Employment Opportunity And Affirmative Action Policy**

The City of Waltham is committed to a policy of equal employment opportunity and to a program of affirmative action in order to fulfill that policy. The City will accordingly recruit and hire into all positions the most qualified persons in light of job-related requirements, and applicants and employees shall be treated in employment matters without regard to unlawful criteria including race, color, religion, ancestry, national origin, sex, sexual orientation, disability, age, positive HIV-related blood test results, status as a disabled or Vietnam Era Veteran, genetic information, or gender identity or expression, as these terms are defined under applicable law, or any other factor or characteristic protected by law.

In addition, The City of Waltham recognizes that discriminatory harassment and sexual harassment are forms of unlawful discrimination, and it is, therefore, the policy of the City of Waltham that discriminatory harassment and sexual harassment will not be tolerated. The City of Waltham also prohibits unlawful harassment on the basis of other characteristics protected by law.

Further, employees and applicants will not be subjected to harassment or retaliation because they have engaged in or may engage in the following: filing a complaint or assisting or participating in an investigation regarding alleged discrimination or harassment as prohibited in the policy statement above; filing a complaint or assisting or participating in an investigation, compliance evaluation, or any other activity related to the administration of the Vietnam Era Veterans' Readjustment Assistance Act of 1974 ("VEVRAA"), Section 503 of the Rehabilitation Act of 1973 ("Rehabilitation Act"), or the Affirmative Action provisions of federal, state or local law; opposing any act or practice made unlawful by VEVRAA requiring equal employment opportunities for individuals with disabilities, disabled veterans, or veterans of the Vietnam Era; or exercising any rights under VEVRAA or the Rehabilitation Act.

Sources: Titles VI and VII of the Civil Rights Act of 1964; the Immigration Reform and Control Act of 1986; Title IX of the Education Amendments of 1972; the Equal Pay Act of 1963; the Age Discrimination in Employment Act of 1967; the Age Discrimination Act of 1975; Sections 503 and 504 of the Rehabilitation Act of 1973; the Americans with Disabilities Act of 1990; Section 402 of the Vietnam-Era Veterans Readjustment Assistance Act of 1974; Executive Order 11246 as amended; The Genetic Information Nondiscrimination Act of 2008 and such other federal, state and local non-discrimination laws as may apply.

CITY OF WALTHAM, MASSACHUSETTS  
TRAFFIC ENGINEERING

3 - BID  
FOR  
RECONSTRUCTION OF SPRUCE STREET  
AND WALNUT STREET PARKING LOTS  
IN  
WALTHAM, MASSACHUSETTS

TO: Mr. Joseph Pedulla, Chief Procurement Officer  
CITY OF WALTHAM, MASSACHUSETTS

The undersigned, as bidder, hereby declares that he has carefully examined the specifications and provisions attached hereto, and that he proposes and agrees, if this Bid is accepted, that he will contract with the CITY OF WALTHAM in the form prescribed for the RECONSTRUCTION OF SPRUCE STREET AND WALNUT STREET PARKING LOTS as herein specified and will provide therefore all necessary materials, labor, machinery and equipment, and will perform all the work in the manner prescribed and according to the requirements of the OWNER.

Accompanying this Bid is cash or a treasurer's check payable to the City of Waltham, or a Bid bond in the amount of five percent of the CONTRACTOR'S Bid price

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

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDA:

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The undersigned, as Bidder, hereby declares that he will take full payment thereof sums based on the following unit prices as applied to the various quantities ordered by the OWNER from time to time during the life of this contract.

103.000	10 EACH	TREE REMOVED (DIAMETER UNDER 24 INCHES) _____ PER EACH	Unit Price	Extended Price
105.000	12 EACH	STUMP REMOVED _____ PER EACH	Unit Price	Extended Price
120.100	560 CY	UNCLASSIFIED EXCAVATION _____ PER CY	Unit Price	Extended Price
127.000	267 SY	CEMENT CONCRETE EXCAVATION _____ PER SY	Unit Price	Extended Price
151.220	441 CY	GRAVEL BORROW FOR SIDEWALKS _____ PER CY	Unit Price	Extended Price
151.900	50 TN	CRUSHER RUN _____ PER TON	Unit Price	Extended Price
220.000	6 EA	DRAINAGE STRUCTURE ADJUSTED _____ EACH	Unit Price	Extended Price
460.000	1,100 TN	CLASS I BITUMINOUS CONCRETE (TYPE I-1) (ROADWAY) _____ PER TON	Unit Price	Extended Price
504.000	100 LF	GRANITE CURB TYPE VA-4 (STRAIGHT) _____ PER LINEAR FOOT	Unit Price	Extended Price
516.000	4 EA	GRANITE CURB CORNER TYPE A (2' RADIUS) _____ EACH	Unit Price	Extended Price
517.000	5 EA	GRANITE CURB CORNER TYPE B (3' RADIUS) _____ EACH	Unit Price	Extended Price
580.000	824 LF	CURB REMOVED AND RESET _____ PER LINEAR FOOT	Unit Price	Extended Price
701.050	344 SY	4" CEMENT CONCRETE SIDEWALK FIBER MESH REINFORCED _____ PER SQUARE YARD	Unit Price	Extended Price
701.150	28 SY	6" CEMENT CONCRETE DRIVEWAY FIBER MESH REINFORCED _____ PER SQUARE YARD	Unit Price	Extended Price



751.000	120 CY	LOAM BORROW _____ PER CUBIC YARD	Unit Price	Extended Price
765.650	425 SY	HYDRO SEEDING _____ PER SQUARE YARD	Unit Price	Extended Price
850.221	54 SF	SAFETY SIGNING FOR CONSTRUCTION OPERATIONS _____ PER SQUARE FOOT	Unit Price	Extended Price
864.040	4 EACH	PAVEMENT HANDICAP 36 IN. LEGENDS REFLECTORIZED WHITE THERMOPLASTIC _____ PER EACH	Unit Price	Extended Price
868.040	1755 LF	4" WHITE REFLECTIVE THERMOPLASTIC LINE _____ PER LINEAR FOOT	Unit Price	Extended Price
	8 EACH	REMOVAL OF LIGHT FIXTURES _____ PER EACH	Unit Price	Extended Price
	4 EACH	REMOVAL OF LIGHT BASES _____ PER EACH	Unit Price	Extended Price
	20 EACH	INSTALLATION OF LIGHTING FIXTURES, PRE-CAST SUB BASE AND CONDUIT _____ PER EACH	Unit Price	Extended Price
	300 SF	REMOVAL OF STONE WALL _____ PER SQUARE FOOT	Unit Price	Extended Price
	900 SF	INSTALLATION OF REDI-ROCK WALL _____ PER SQUARE FOOT	Unit Price	Extended Price
	37 EACH	INSTALLATION OF 5 FOOT SIGN POST AND ANCHOR _____ PER EACH	Unit Price	Extended Price

	10 EACH	INSTALLATION OF 10 FOOT SIGN POST AND ANCHOR _____ PER EACH	Unit Price	Extended Price
	9 SY	INSTALLATION OF PAY STATION 8" CONCRETE PAD _____ PER SQUARE YARD	Unit Price	Extended Price
	1	ALLOWANCE FOR OTHER WORK _____	Unit Price	Extended Price \$20,000
			<b>Total Bid Price in figures:</b>	
<b>Total Bid price written in words:</b>			\$ _____	

It is understood and agreed that the quantities set forth in the Bid are provided for bid comparison only and the actual quantity of work to be done may vary, as determined by the OWNER. The CONTRACTOR agrees that he shall neither have nor assert any claim for or be entitled to any additional compensation for damages or for loss of anticipated profits on work that is eliminated.

The time for completion of work under this contract shall be one year from the date of the Notice to Proceed. The City of Waltham, at its sole option, may elect to extend the contract period for an additional year.

All unit prices quoted herein shall be firm for the duration of this Contract, regardless of any changes in the cost of materials and labor, with the exception of hot mix asphalt (HMA) mixtures, diesel fuel and gasoline, and Portland cement concrete mixtures. For monthly price adjustments for these items, refer to Mass Highway documents 00811, 00812 and 00814 respectively. Copies of these documents are included in section 8.

In accordance with Massachusetts General Laws, the undersigned certifies that the bidder has filed all state tax returns and paid all state taxes required by law.

In accordance with Massachusetts General Laws, 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.

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BIDDER

---

SIGNATURE

---

BUSINESS ADDRESS

---

TELEPHONE NUMBER

---

FAX NUMBER

---

EMAIL ADDRESS

---

DATE

**Bidder must read pages 2-17, 3-8 and 3-9, and submit pages 2-17 and 3-9 filled out in their entirety with the Bid.**

### PROOF OF CONTRACTOR'S RESPONSIBILITY

Before a contract will be awarded to any Bidder, he will be required to furnish evidence satisfactory to the OWNER that he has all of the following qualifications:

- A.** Ability, equipment, organization, and financial resources sufficient to enable him to construct and complete the work successfully within the time required.
  
- B.** Experience during the past three years in the successful construction of similar engineering projects, the magnitude of which shall be not less than one-half the work herein specified. In this connection, the attention of the Bidder is directed to the Bidder's experience form attached, that shall be used in determining the responsibility of the Bidder. The OWNER may require additional information whenever, in his judgment, such information is necessary to determine the responsibility of the Bidder.

An experienced Bidder shall be construed to mean that the Bidder has a minimum of three individuals within his organization that have the experience to supervise a job of this nature and magnitude. Their experience shall include previous work of a nature similar to the work prescribed in this contract.

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 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 OWNER.



CITY OF WALTHAM, MASSACHUSETTS  
TRAFFIC ENGINEERING

4 - CONTRACT  
FOR  
RECONSTRUCTION OF SPRUCE STREET  
AND WALNUT STREET PARKING LOTS  
IN WALTHAM,  
MASSACHUSETTS

CLAUSE 1. This agreement is made this \_\_\_\_\_ day of \_\_\_\_\_ in the year Two Thousand Fourteen by and between the City of Waltham, party of the first part, hereinafter called the CITY, by its MAYOR, and

party of the second part, hereinafter called the CONTRACTOR.

CLAUSE 2. Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the City of Waltham for itself, and said CONTRACTOR for his heirs, executors, administrators and assigns as follows:

The CONTRACTOR agrees to furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in RECONSTRUCTION OF SPRUCE STREET AND WALNUT STREET PARKING LOTS and in strict conformity with the provisions of this contract and of the INVITATION TO BID, Bid and specifications hereto annexed. The said specifications and INVITATION TO BID are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

CLAUSE 3. In consideration of the foregoing promises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required but not included in the items herein mentioned, and for any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

CLAUSE 4: The time for completion of both parking lots under this contract shall be 120 days from the date of the Notice to Proceed. Only one parking lot will be under construction at a time. Work hours will be Monday – Friday 8:00 AM – 5:00 PM.

It is understood and agreed that the quantities set forth in the Bid are approximate and the actual quantity of work to be done may be more or less, as determined by the OWNER. The CONTRACTOR agrees that he shall neither have nor assert any claim for or be entitled to any additional compensation for damages or for loss of anticipated profits on work that is eliminated.

**FOR THE CITY OF WALTHAM**

**FOR THE CONTRACTOR**

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

\_\_\_\_\_  
Authorized Corporate Officer,      Date

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

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

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

\_\_\_\_\_  
John Cervone, City Solicitor,      Date  
AS TO FORM ONLY

\_\_\_\_\_  
Paul Centofanti, Auditor      Date

\_\_\_\_\_  
Michael Garvin, Traffic Engineer      Date

CITY OF WALTHAM, MASSACHUSETTS  
TRAFFIC ENGINEERING

5A - PAYMENT BOND  
FOR  
RECONSTRUCTION OF SPRUCE STREET  
AND WALNUT STREET PARKING LOTS  
IN WALTHAM,  
MASSACHUSETTS

KNOW ALL MEN BY THESE PRESENT, THAT

\_\_\_\_\_ AS PRINCIPAL AND  
\_\_\_\_\_ AS SURETY

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

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden

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

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

AND PROVIDED, that any alterations that may be made in the terms of the Contract or in the work to be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the OWNER of any extension of



time for the performance of the Contract, or any other forbearance on the part of either the OWNER or the CONTRACTOR to the other, shall not in any way release the CONTRACTOR and the Surety or Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such altercations, assignment, transfer, subletting, extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

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

IN WITNESS WHEREOF, said CONTRACTOR and Surety have hereunto set their respective names

this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WITNESSES:

\_\_\_\_\_  
CONTRACTOR (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
SIGNATURE AND TITLE

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
SURETY (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
SIGNATURE AND TITLE

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
ATTORNEY-IN-FACT

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

CITY OF WALTHAM, MASSACHUSETTS  
TRAFFIC ENGINEERING

5B - PERFORMANCE BOND  
FOR  
RECONSTRUCTION OF SPRUCE STREET AND  
WALNUT STREET PARKING LOTS  
IN WALTHAM,  
MASSACHUSETTS

KNOW ALL MEN BY THESE PRESENT, THAT \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ AS PRINCIPAL AND

\_\_\_\_\_ AS SURETY

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

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

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden

\_\_\_\_\_  
heirs, executors, administrators and assigns, shall faithfully perform the Contract for RECONSTRUCTION OF SPRUCE STREET AND WALNUT STREET PARKING LOTS on his part and during the life of any guaranty or warranty, including warranty for defective materials and workmanship required under this Contract, and satisfy all claims and demands incurred for the same; and shall fully indemnify and save harmless the OWNER from all costs and damage that it may suffer by reason of failure so to do, and shall fully reimburse and repay the OWNER all outlay and expense that the OWNER may incur in making good any such default, and shall promptly make payment to all persons supplying labor or materials for use in the prosecution of the work provided for in said Contract; and shall indemnify and save harmless the said OWNER, its officers and agents from any and all suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect,

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

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

This bond is made for the use and benefit of all persons, firms and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obliges hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

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

IN WITNESS WHEREOF, said CONTRACTOR and Surety have hereunto set their respective names

this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WITNESSES:

\_\_\_\_\_  
CONTRACTOR (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
SIGNATURE AND TITLE

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
SURETY (SEAL)

NAME \_\_\_\_\_ BY \_\_\_\_\_  
SIGNATURE AND TITLE

ADDRESS \_\_\_\_\_ BY \_\_\_\_\_  
ATTORNEY-IN-FACT

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

CITY OF WALTHAM, MASSACHUSETTS  
TRAFFIC ENGINEERING

5C - ATTESTATION  
FOR  
RECONSTRUCTION OF SPRUCE STREET AND  
WALNUT STREET PARKING LOTS  
IN WALTHAM, MASSACHUSETTS

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

\_\_\_\_\_  
Signature of CONTRACTOR

\_\_\_\_\_  
Name of CONTRACTOR (Agency)

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

Date \_\_\_\_\_

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

# CITY OF WALTHAM, MASSACHUSETTS

## TRAFFIC ENGINEERING

### 6 - SPECIFICATIONS FOR RECONSTRUCTION OF SPRUCE STREET AND WALNUT STREET PARKING LOTS IN WALTHAM, MASSACHUSETTS

#### 1) GENERAL PROVISIONS

(a) The attention of the CONTRACTOR is called to the provisions of MGL Chapter 149, §6: that in the employment of mechanics, teamsters and laborers, preference shall first be given to citizens of the Commonwealth of Massachusetts who have served in the Armed Forces of the United States in time of war and have been honorably discharged therefrom, or released from active duty therein, and who are qualified to perform the work, to which the employment relates, and secondly, to citizens of the Commonwealth of Massachusetts generally and if they cannot be obtained in sufficient numbers, then to citizens of the United States: that no laborer, workman or mechanic working within the Commonwealth of Massachusetts in the employ of the CONTRACTOR, subcontractor or other person doing or contracting to do the whole or any part of the work contemplated by this agreement shall be requested to work more than eight hours in any one day, or shall be requested or required to work more than forty hours any one week, except in cases of extraordinary emergency, and that the CONTRACTOR will in all things, observe and comply with any and all other provisions of law relative to agreements or contracts for the performance of public work.

(b) The CONTRACTOR shall do all the work and furnish all the labor, materials, implements, tools, machinery and applications, except as herein otherwise specified, necessary or proper for performing and completing the work required by this contract in the manner herein specified.

(c) All the work, labor and materials to be done and furnished under this contract shall be done and furnished strictly pursuant to and in accordance with the directions of the OWNER as given from time to time during the progress of the work under the terms of this contract.

(d) The CONTRACTOR shall complete the entire work in accordance with the specifications for the work and to the satisfaction of the OWNER.

(e) The INVITATION TO BID and the BID submitted by the CONTRACTOR shall be made parts of this contract.

(f) The CONTRACTOR, during the progress of the work, shall take every precaution to ensure the absolute safety of the public from injury.

(g) The CONTRACTOR agrees to give his personal attention to the work or, during his absence, agrees to delegate his authority to a duly authorized agent who shall represent him in the decision of all matters relative to the construction of the work. The CONTRACTOR is to be responsible for any damage to property resulting from his operation.

(h) The attention of the CONTRACTOR is also called to the provisions relative to directing or requiring employees to lodge, board or trade at any particular place or with any particular person or persons and the CONTRACTOR agrees to be governed by such provisions.

(i) The CONTRACTOR shall keep himself fully informed as to all laws, bylaws, ordinances, regulations, orders, decrees and wage rates, and shall protect and indemnify the CITY and all its officers, agents and servants against any claim or liability arising from, or based on, the violation of any such all laws, bylaws, ordinances, regulations, orders, decrees and wage rates, whether by himself or his employees or subcontractors.

(j) The CONTRACTOR agrees to take out and maintain at his own expense insurance against damage arising from injury to his employees, in accordance with MGL Chapter 152 and amendments thereof.

## **2) DEFINITIONS**

(a) "ENGINEER," "CITY ENGINEER," "CITY" or "OWNER" shall mean the CITY OF WALTHAM, acting directly or through properly authorized agents; such agents acting within the scope of the particular duties entrusted to them.

(b) The word "CONTRACTOR" shall mean the party or parties contracting to perform the work covered by this contract or his or their legal representative successors or assigns.

## **3) EXAMINATION OF THE SITE**

Before submitting his BID, the CONTRACTOR shall visit the site, examine its condition and thoroughly acquaint himself with the obstacles and advantages of performing the work. He shall also study the plans and specifications explanatory of the work and compare the same with the information gathered by the examination of the site.

## **4) SITE CONDITIONS**

It is expressly understood and agreed that the CITY does not warrant or guarantee that the materials encountered during construction will be the same as the information given on the drawings. The results and descriptions are for the information of the CONTRACTOR, but are not guaranteed. The CONTRACTOR must satisfy himself regarding the character and quantities of the various materials and work to be done. It is further understood and agreed that the Bidder or CONTRACTOR will not use any of the information obtained in such examination in any manner as a basis or ground of claim or demand of any nature against the CITY arising from or by reason of any variance that may exist between the samples examined and described and the actual materials or structures encountered during the construction work.

## **5) ESTIMATED QUANTITIES**

Wherever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents, including the BID, they are given for use in comparing Bids. The right is especially reserved to increase or diminish them as may be deemed reasonably necessary or desirable by the OWNER to complete the work contemplated by this CONTRACT, and such increase or reduction shall in no way invalidate this CONTRACT, nor shall any such increase or diminution give cause for claims or liability for damage. CONTRACTOR shall order materials based on actual field measurements and not quantities estimated in the Bid. The City of Waltham will not be responsible for overstocked materials.

**6) ITEMS NOT LISTED IN THE BID**

The lump sum and unit price items listed in the Bid form are intended to cover all items of work to be done and materials and work to be furnished to fully complete the work in accordance with the Contract Documents. Appurtenant items of work as shown on the Drawings or as specified or as required, and parts of the work, materials, and equipment not listed separately and not shown or specified to complete the work under the item or not shown in the Bid shall be considered as incidental to the applicable item and included in the cost of payment under the various applicable Bid items of work, and no separate payment will be made for such items. It shall be the responsibility of the CONTRACTOR to verify any missing or incomplete data.

**7) BALANCED BIDDING**

Bids should be made on each separate item of work shown in the BID with reasonable relation to the probable cost of doing the work included in such items, and the right is reserved to reject wholly any Bid where an item or items thereof are obviously unbalanced or appear to the CITY to be so unbalanced as to affect or to be liable to affect adversely any interests of the CITY. **The attention of the Bidder is called to the fact that unbalancing of Bids may adversely affect the CONTRACTOR if certain portions of the work are increased or decreased as provided in the paragraph 5).**

**8) DISCREPANCIES, ERRORS AND OMISSIONS**

Drawings and specifications are intended to be explanatory of each other, but should any discrepancy appear or any misunderstanding arise as to the import of anything contained in either, the interpretation and decision of the OWNER shall be final and binding on both parties to this contract. Any correction of error or omissions in drawings and specifications may be made by the OWNER when such correction is necessary for the proper fulfillment of their intention as construed by him. Where said correction of errors or omissions, except as provided in the next two paragraphs below, adds to the amount of work to be done by the CONTRACTOR, compensation for said additional work shall be made under the provision for "Claims for Additional Work," except where the additional work may be classed under some item of work for that a unit price is included in the BID.

The fact that specific mention of a fixture, or any part of the work, is omitted in the specifications, whether intentionally or otherwise, when the same is clearly shown or indicated on the drawings, or is usually and customarily required to complete such work as is specified herein, will not entitle the CONTRACTOR to consideration in the matter of any claim for extra compensation. The said fixtures or work, or both, must be installed or done the same as if called for by both the drawings and the specifications.

Work indicated on the drawings and not mentioned in the specifications or vice versa, and all work and material usual and necessary to make the work complete in all its parts, whether or not indicated on the drawings or mentioned in the specifications shall be furnished and executed the same as if called for by both the drawings and specifications.

**9) CLAIMS FOR ADDITIONAL WORK**

The CONTRACTOR shall make no claim for additional work or materials unless the same shall be performed or furnished in pursuance of an order from the OWNER and unless the same shall be specifically authorized in writing, signed by the MAYOR. Notice of all claims for additional work and material shall be made to the OWNER in writing ten days from the beginning of such work or the furnishing of such materials.

#### **10) SUBCONTRACTS**

No work may be sublet or subcontracted without prior written approval of the OWNER.

#### **11) OWNER TO BE REFEREE**

To minimize disputes and litigation, it is further agreed by and between the parties to this contract that the OWNER shall decide all questions arising during the progress of the work and his decisions shall be final and binding upon the parties to this contract.

#### **12) JURISDICTIONAL DISPUTES**

It shall be the responsibility of the CONTRACTOR to see that the proper trades perform their respective work.

#### **13) COMPLETION OF THE WORK**

(a) The CONTRACTOR agrees to complete the work hereunder required in every particular in a prompt and diligent manner and to the satisfaction of the OWNER in accordance with the plans, specifications and this contract within the period of the time stated in the BID.

(b) The MAYOR shall have the right to extend the time for completion of said work but such time shall not be extended except upon application in writing by the CONTRACTOR and good cause shown.

(c) The time shall be extended if delay is caused by a strike or boycott for which the CONTRACTOR is in no way responsible and which the CONTRACTOR cannot reasonably avoid.

(d) Neither an extension of time, for any reason beyond that fixed herein for the completion of the work nor the doing and acceptance of any part of the work called for by this contract, shall be deemed to be a waiver by the CITY OF WALTHAM of the right to abrogate this contract for abandonment or delay in the manner provided for in paragraph 14) of this contract.

#### **14) ABANDONMENT OF THE WORK**

The CONTRACTOR further agrees that if the work to be done under this contract shall be abandoned, or if the work shall not be fully completed on the day herein specified, or if this contract shall be assigned by the CONTRACTOR otherwise than as herein specified, or if at any time the OWNER shall be of the opinion and shall certify in writing to the MAYOR, that the work is unnecessarily or unreasonably delayed, or that the CONTRACTOR is willfully violating any of the conditions or agreements of this contract, or is not executing said contract in good faith, or is not making such progress in the execution of the contract as to indicate its completion within the required time, the MAYOR shall have the power and the right to notify the CONTRACTOR to discontinue said work or such part thereof as the MAYOR may designate, and the MAYOR shall thereupon have the power and the right to notify the CONTRACTOR to discontinue said work or such part thereof as the MAYOR may designate; and the MAYOR shall thereupon have the power by contract or otherwise as he may determine, to employ such persons and obtain such appliances and tools as he may deem necessary to work at, and be used to complete the work herein described or such part thereof as he may deem necessary and to use such implements and materials of every description as may be found upon the premises both such as enter into the completed work and such as are necessarily used in and about the same in the course of construction, and to procure other materials and implements to the CONTRACTOR; and the expense so charged shall be deducted and paid by the MAYOR out of such money as may be deemed either due at any time thereafter become due to the CONTRACTOR under this contract or any part thereof, and in case such expense is less than the sum that would have been payable under this contract if the same had been completed by the CONTRACTOR, then the CONTRACTOR shall be entitled to receive the difference and in case such expense exceeded



the sum which would have been payable under this contract if the same had been completed by the CONTRACTOR, then the CONTRACTOR shall pay the amount of such excess to the CITY OF WALTHAM.

**15) PAYMENT TO THE CONTRACTOR**

The OWNER shall, from time to time, certify as to the work done to date and the value thereof, and payment shall be made to the CONTRACTOR on a unit price basis for the work completed to date. The CITY OF WALTHAM shall retain five percent of such value and pay to the CONTRACTOR the balance, after deduction therefrom all previous payments and all sums to be kept or retained under the provisions of previous payments and all sums to be kept or retained under the provisions of this contract. It is further agreed that the sum as herein provided will be paid by the CITY OF WALTHAM and shall be received by the CONTRACTOR as full compensation for furnishing and installing material and executing all the work contemplated by the CONTRACTOR, also for all loss or damage arising out of the nature of the work aforesaid or from the action of the elements or from any unforeseen obstruction or difficulties that may be encountered in the prosecution of the same or from hindrance or delay from any cause whatsoever in the progress of the work and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of said work as herein specified and for well and faithfully completing the whole in the manner and in accordance with the plans and specifications and requirements of the OWNER. Ninety five percent of such sum shall be paid by the CITY OF WALTHAM to the CONTRACTOR, it being understood that the final payment be made within sixty days after this contract is completely finished provided that the OWNER shall certify in writing that all the work has been done to his satisfaction, and provided further that nothing herein contained shall be construed to effect the right of the MAYOR hereby reserved, to reject the whole or any portion of the aforesaid work should the certificate be found or known to be inconsistent with the terms of this agreement, or otherwise improperly given and provided further that if at any time there shall be any claim of the sort mentioned in paragraph 16) or paragraph 32) of this contract to the MAYOR, the CITY OF WALTHAM shall have the right to retain out of the payment an amount sufficient to pay such claim until the same shall be satisfied or canceled.

**16) UNPAID CLAIMS**

The CONTRACTOR further agrees that he will pay all bills for labor and materials contracted for by him on account of the work herein contemplated and that he will furnish the MAYOR at her request with evidence satisfactory to him that all persons who have done work or furnished material under this contract and all claims of private corporations or individuals for damages of any kind, caused by the construction of said work, have been fully paid or satisfactorily secured. The MAYOR shall cause to be retained, out of such amount due the CONTRACTOR, sums sufficient to cover any such unpaid claims.

**17) PERMITS**

The CONTRACTOR shall obtain all necessary permits for the execution of this contract, including a street opening permit, obtained at no charge from the Consolidated Public Works Department (781) 314-3800.

**18) PROSECUTION AND PROGRESS**

The CONTRACTOR shall commence work within fifteen days after the mailing of the executed CONTRACT unless otherwise ordered in writing by the OWNER, and the CONTRACTOR shall thereafter prosecute the work at such places and in such order as the OWNER may from time to time prescribe.

Should the prosecution of the work for any reason be discontinued, the CONTRACTOR shall notify the OWNER at least twenty-four hours prior to resumption of operations.

#### **19) SCHEDULE**

Within fifteen days after the mailing of the executed CONTRACT, a meeting shall be held between the OWNER and the CONTRACTOR who is awarded the Bid. At this meeting, a schedule of the work to be done shall be set up by the OWNER and the CONTRACTOR. Time schedules for various phases of construction will be determined and compiled in a manner that is satisfactory to both the CONTRACTOR and the OWNER.

#### **20) LINES AND GRADES**

The OWNER will establish sufficient points to fix the location, alignment and elevation of the work. The CONTRACTOR will furnish the layout of all parts of the work from the points furnished and shall maintain all such points, lines and grades at no additional cost to the CITY. Finished surfaces, in all cases, shall conform as near as practical to the lines and grades given. The CONTRACTOR shall supply appropriate survey equipment for use by the OWNER to permit the OWNER to check lines and grades.

#### **21) PROPERTY BOUNDS**

The CONTRACTOR shall exercise due care when working around all street and property bounds (whether granite, concrete, iron pins, wooden stakes, spikes or nails) that are to remain. Should any damage to a bound result from the actions of the CONTRACTOR, the bound shall be replaced and/or realigned by the CONTRACTOR with the assistance of a Professional Land Surveyor, as required by the OWNER, at no cost to the CITY. In the event of changes in grade and the bound is not to be replaced, the CITY will provide a frame and cover to be installed by the CONTRACTOR as incidental to the work with no additional cost to the CITY.

#### **22) NOTICE TO UTILITY COMPANIES**

The CONTRACTOR shall comply with MGL Chapter 82, §40. Written notice shall be given by the CONTRACTOR to all public service corporations or municipal and State officials owning or having charge of publicly or privately owned utilities at least one week in advance of commencement of operations that will affect such utilities. These shall include, but not be limited to gas, electricity, water and sewer, fire alarm, cable television or telephone services within the limits of the contract. The CONTRACTOR shall, at the same time, file a copy of such notice with the OWNER.

#### **23) SIGNS**

When signs are removed for purposes of construction they shall be replaced in a timely manner as required by the OWNER. Stop signs, Do Not Enter signs, one-way signs and any other signs that would leave hazardous conditions if removed shall be maintained unless appropriate safety precautions have been taken as approved by the OWNER.

#### **24) PROTECTION OF UTILITY SERVICES AND MAINS**

The CONTRACTOR shall make his own investigation and take due caution to assure that no damage to existing structures, mains, drainage lines, conduit, or other utilities will occur as a result of his operations. The CONTRACTOR shall notify Mass. DIG SAFE (888) 344-7233 and procure a DIG SAFE number at each location prior to disturbing ground in any way.

**25) UTILITY COORDINATION**

The CONTRACTOR shall be responsible for coordinating all efforts of the respective utility companies for any relocation or work efforts. Utilities include:

NSTAR	800 Boylston Street	Boston, MA 02199-8003	John Zappi	(339) 987-7768
National Grid	160 Newton Street	Waltham, MA 02452	Kevin Souza	(781) 398-7301
Verizon	480 Rear Arsenal Street	Watertown, MA 02472	Ed McCarthy	(617) 673-9060
Comcast	55 Concord Street	North Reading, MA 01864	Bob Hagwood	(508) 208-0646
RCN	201 University Ave	Westwood, MA 02090	Maintenance	(877) 726-7000
Street Dept.	167 Lexington Street	Waltham, MA 02452	Arthur Mullin	(781) 314-3859
Water & Sewer	169 Lexington Street	Waltham, MA 02452	Lisa Goyer	(781) 314-3828

**26) ACCESS TO AREA MERCHANTS, BUSINESSES, HOUSES AND GARAGES**

The CONTRACTOR shall adjust and provide a suitable vehicle and pedestrian access to all area merchants, businesses, houses and garages at all times as necessary and to the satisfaction of the ENGINEER.

**27) MATERIALS**

Slips for materials purchased to be used on the work shall be submitted to the OWNER prior to installation of the materials. All slips shall clearly show the type and/or class of the material and the quantity purchased. The Vendor's name shall be shown on all slips.

**28) MATERIALS REMOVED AND STACKED**

Unless otherwise specified, all materials to be removed and stacked shall remain the property of the City of Waltham. The CONTRACTOR shall carefully remove, transport and stack any of these materials at an area within the City of Waltham, designated by the OWNER. If the City does not want any of these materials, they shall become the property of the CONTRACTOR and shall be removed from the project site and properly disposed of at no additional cost to the CITY.

**29) INVOICING**

The contractor shall submit a separate invoice for each street and it shall include the total cost of improving said street/sidewalk including all equipment, labor, materials, police details, other safeguards as required and all else incidental thereto.

**30) DISPOSAL OF SURPLUS MATERIAL**

All existing and other materials not required or needed for use on the project, and not required to be removed and stacked, shall become the property of the CONTRACTOR and shall be immediately removed from the site during the construction period and legally disposed of.

### **31) PROTECTION OF CATCH BASINS AND WATER RESOURCES**

The CONTRACTOR shall take great care to prevent excavated material and pavement from entering catch basins and manholes. In the event such material enters these structures, it shall be immediately removed. Silt fabric shall be installed between the grate and cover of catch basins and removed as soon as protection is no longer required.

### **32) DAMAGES**

(a) On any and all areas where work of any description whatsoever is performed, the CONTRACTOR shall be held strictly responsible for all damage in the execution of this contract and the restoration to the original condition of all driveways, walks, lawns, gardens, shrubbery, buildings, stone bounds, walls, ornamentals, utilities, etc., located within the locus of this contract and all to the satisfaction of the OWNER.

(b) The CONTRACTOR further agrees that he will be responsible for any damage to any person or property resulting from defects or from any cause whatsoever during the progress of the work or at any time before its completion and final acceptance, and that he will indemnify and save harmless the CITY OF WALTHAM from all suits or actions of every name and description brought for or on account of injuries or damages received by any person or persons from the CONTRACTOR, his servants or agents, in the construction of said work or in consequence of any negligence regarding the same, or improper materials used in its construction, or by or on account or any act or omission of the CONTRACTOR or his agents.

(c) The CONTRACTOR further agrees that so much of the money due to him under this contract or agreements, as shall be considered necessary by the MAYOR, may be retained by the CITY OF WALTHAM until such suits or claims for damages as aforesaid, shall have been settled and evidence to that effect furnished to the satisfaction of the MAYOR.

### **33) REPAIRS AND REPLACEMENTS**

(a) If at any time during the period of one year from the date of final completion of the work contemplated in this contract, as determined by the OWNER, any part of such shall, in the opinion of the OWNER require replacing or repairing, or damage to other property of the CITY is caused owing to any defect in the work, the OWNER may notify the CONTRACTOR in person or by mail to make the required repairs or replacements and repair such damage.

(b) If the CONTRACTOR shall neglect to make such repairs or replacements to the satisfaction of the OWNER within ten days from the date of giving or mailing such notice, then the OWNER may employ other persons to make the same.

(c) The CONTRACTOR agrees, upon demand, to pay the CITY all amounts that it expends for such repairs or replacements.

#### **34) PUBLIC SAFETY AND CONVENIENCE**

The CONTRACTOR shall provide necessary access for fire apparatus and other emergency vehicles through work zones to abutting properties at all times.

At the end of each working day, trenches shall be backfilled to grade, or covered with secured steel plates. Each edge of the plates shall either be beveled and lay flat, or protected by a bituminous ramp at a slope of two feet horizontally and one inch vertically. Any temporary patching material may be used to construct the ramps. The cost of patching materials, maintenance and removal will be considered incidental to items in the contract and there will be no separate payment.

Sweeping and cleaning shall be performed at the end of each day, and throughout the day when conditions warrant. Sweeping and cleaning shall be considered incidental to the work being performed. When requested by the OWNER, calcium chloride shall be applied to unpaved surfaces as specified under ITEM 440.000 of the Technical Provisions.

Sweeping and cleaning of surfaces beyond the limits of the project required to clean up material caused by spillage or vehicle tracking during the various phases of the work shall be considered as incidental to the work being performed under the Contract and there will be no additional compensation.

#### **35) SAFETY SIGNAGE**

Unless otherwise indicated, the CONTRACTOR shall provide safety signage, lighted drums and barricades for detours, road closings, parking restrictions, etc. at his expense. Sign materials, legends and mounts shall be approved by the OWNER prior to installation.

#### **36) TRAFFIC POLICE**

When, in the opinion of the OWNER, policemen are necessary for the directing of traffic, their services shall be paid for by the CONTRACTOR and the CONTRACTOR shall be reimbursed as specified under ITEM 999.001 of the Technical Provisions. To arrange for traffic police, telephone (781) 314-3604.

CITY OF WALTHAM, MASSACHUSETTS

7 - TECHNICAL PROVISIONS  
FOR  
RECONSTRUCTION OF SPRUCE STREET AND  
WALNUT STREET PARKING LOTS  
IN  
WALTHAM, MASSACHUSETTS

## CLEARING AND GRUBBING

### DESCRIPTION

#### **General.**

This work shall consist of clearing, grubbing, cutting, removal and disposal of all vegetation and debris from areas either within or outside of the Right-of-Way as shown on the plans or designated by the Engineer.

The work shall also include the preservation from injury or defacement of all vegetation and objects designated by the Engineer to remain.

The burning of trees, brush, stumps, etc., will not be permitted. The Contractor shall provide other satisfactory methods of disposal without additional compensation.

#### **Quality of Work.**

Quality of work must conform to all accepted tree trimming practices. All trimming and pruning shall conform to recognize tree surgery practices, and particular note should be made that painting with an approved tree dressing or paint, will be required on all cuts 2 inches or over in diameter.

The dressing or paint shall be applied no later than two days after the cuts are made.

Recognized tree surgery practices include among others, the fact that all limbs and branches which require removal and all stubs regardless of age must be cut flush either to a union with the next larger sound limb or branch or flush to the trunk of the tree.

The cutting shall be performed by experienced woodsmen. Trained tree climbers are required for pruning of tall growth. Care shall be exercised by the Contractor to prevent injury to trees and shrubs designed to be preserved. Any injury to limbs, bark or roots of such plants shall be repaired by the Contractor, as directed, or the plants replaced without additional compensation for such repair or replacement.

#### **Disposal of Trees.**

All trees to be cleared shall become the property of the Contractor, and the satisfactory disposal of the wood in such trees outside the Right-of Way shall become his responsibility.

The tress, including cuttings and slash shall be disposed after cutting as soon as practicable and in such a manner as not to distract from the appearance of the roadside.

If the existing ground in the area is disturbed by any of the work or equipment, the Contractor shall rough-grade and loam and seed if necessary the disturbed areas, if so directed, without additional compensation.

#### **Payment Items**

103.000	Tree removed (diameter under 24 Inches)	Each
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## **General**

### **Disposal of Stumps and Brush.**

After removal, all stumps including the major root system shall be disposed by the Contractor at his own responsibility outside the layout where the material will not cause obstructions to streams and will not detract from the appearance of the roadside.

### **Disposal of Dutch Elm Diseased Wood.**

Dutch Elm diseased wood shall be disposed of in accordance with the provisions of General Law, Chapter 87, Section 5 and Chapter 132, Sections 8 and 11, as amended; and in accordance with any additional local regulations.

Where the work includes the removal of elm trees or the limbs of elm trees, such trees or limbs thereof shall be disposed of immediately after cutting or removal and in such a manner as to prevent the spread of Dutch elm disease. This shall be accomplished by covering them with earth to a depth of at least 6-inches in areas outside the highway location where the Contractor has arranged for disposal.

Where the work includes the removal and disposal of stumps of elm trees, such stumps shall be completely disposed of immediately after cutting in the manner specified above.

### **Method of Measurement.**

Only such trees as have a shortest diameter of at least 9-inches and less than 24-inches shall be included in the item of Trees Removed (Diameter Under 24-Inches). Only such trees as have a shortest diameter of 24- inches or more shall be included in the item of Trees Removed (Diameter 24 Inches and Over).

The item of Stumps Removed shall include the removal and satisfactory disposal of all tree stumps which remain in their original position and 9 –inches or more in shortest diameter at the cutoff point, where the trees have been previously removed by others. A stump shall not be construed as a tree under these specifications unless the trunk extends over 6-feet above the average ground.

Trees or stumps to be removed which have the shortest diameter specified for payment will be measured in place by the following procedure.

Where the tree consists of a single trunk extending more than a 3-foot vertical height above the average natural ground line, the shortest diameter shall be measured at the 3-foot level above the average elevation of the original ground.

Any tree whose main trunk separates into multiple trunks or which has limbs or branches growing out from the main trunk below the 3-foot level defined hereinbefore shall have its shortest diameter measure at the lowest point on the main trunk where multiple growths or branching out begins.

Measurement for payment under the respective items shall be such that any individual growth to be classed as a tree stump shall be measured in a manner to limit payment to one single tree or stump at each particular location of the individual growth. When multiple trunks with a common root system are separated at ground level each separate trunk shall be considered as an individual growth under these specifications.



The quantity of trees or stumps to be paid for will be the number actually removed by the Contractor in the completed and accepted work as determine by count.

The removal of trees, including the stumps thereof and required spray material will be paid for at the contract unit price each for the particular kind of work involved, as defined hereinbefore when a quantity is given in the Proposal under their respective items, otherwise this work will be paid for at the contract unit price for excavation or at the contract unit price per acre of Clearing and Grubbing or Selected Clearing and Thinning, whichever is applicable. The contract unit price shall include the cost of all arrangements and methods required to protect from harm all existing overhead or underground installations. The contract unit price for the respective items shall not include any tees or stumps removed from the area paid for under the item of Clearing and Grubbing or Selected Clearing and Thinning.

Only such trees or stumps as have a shortest diameter of 9-inches and over, measured as stipulated in Sub-section 101.80 shall be included for payment.

**Payment Items**

105.000	Stump Removed	Each
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## UNCLASSIFIED EXCAVATION

**GENERAL:** This work shall consist of the necessary excavation and removal of various materials as shown on the contract drawings or as required by the OWNER. All work shall be done by the CONTRACTOR. All excavated material shall be disposed of in a proper manner. All material shall be cleaned up by the CONTRACTOR as the work progresses. No material or waste shall be left on the street overnight and no driveways or sidewalks shall be left in a rough or unsafe condition unless lighted and guarded by the CONTRACTOR at his expense. Where abutting lawns are cut, the CONTRACTOR must properly adjust and reseed the lawn to the new grade. Where abutting surfaces of blacktop or other material are disturbed beyond the limit of adjustment, the CONTRACTOR shall replace same at his own expense.

Excavation shall include the removal and disposal of bituminous, earth, curbing, signposts, and/or any incidental items as indicated on the contract drawings or as required by the OWNER. Items and/or materials that are classified for payment under some other unit item within this contract shall not be considered as part of ITEM 120.100.

The edges of existing concrete surfaces that are to receive new replacement materials shall be saw-cut along even lines and shall be cut back to obtain clean, sound vertical edges of the abutting material.

The edges of bituminous concrete shall be saw-cut or cut with pneumatic tools along even lines and shall be cut back to obtain clean, sound vertical edges of the abutting material. All edges shall be coated with an approved bituminous material for proper bonding of new pavement construction with the existing pavements. All preparation of edges of existing pavements shall be provided as specified herein and shall be subject to approval by the OWNER.

The City of Waltham, at its own discretion, may retain the right to the excavated gravel and the OWNER may select a site for said gravel to be placed. On-site gravel, if requested by the OWNER, shall be saved for re-use on the job. The gravel shall be excavated separately from the bituminous, stored (if required) and/or relocated on the site or at a site within the city selected by the OWNER, at no additional cost to the City of Waltham. All work shall be done by the CONTRACTOR.

If requested by the OWNER, any suitable excess material (as determined by the OWNER) excavated from the site shall be re-used to fill areas below subgrade. This shall be done at no extra cost to the City.

All saw-cutting of materials shall be done at no extra cost and shall be considered as incidental to the item unless there is a separate and/or specific pay item listed for saw-cutting in the Contract.

CONTRACTOR shall avoid damage to trees that have parts of their root system in the roadway, sidewalk or planting areas that are selected for excavation. Said excavation shall be accomplished as carefully as possible or as required by the OWNER.

**NOTE: Material excavated during reclamation or cold planing operations is not included in this item.**

**MEASUREMENT:** Measurement for unclassified excavation shall be the number of cubic yards of material removed and legally disposed of. This quantity shall be based on the OWNER'S field measurements and/or office calculations.

Failure to allow ample time for the OWNER to make the required measurements will forfeit the CONTRACTOR'S right of claim to any excavation other than that allowed by the OWNER.

**PAYMENT:** Payment for unclassified excavation shall be made for the number of cubic yards of material removed and disposed of as determined above at the contract unit Bid price for ITEM 120.100 as set forth in the Bid. Unless it is classified for payment under some other unit item within this contract, saw-cutting of pavements shall be considered as incidental to the work and shall be included within the unit price for unclassified excavation.

**Payment Items**

120.100	Unclassified Excavation	Cubic Yards
127.000	Concrete Excavation	Square Yards

**CONCRETE SIDEWALK EXCAVATION**

**GENERAL:** This work shall consist of all necessary excavation and disposal of existing concrete surfaces as shown on the Contract Drawings or as specified by the OWNER. All work shall be done by the CONTRACTOR and the material shall be cleaned up as the work progresses. No material or waste shall be left on the street overnight and no driveway or sidewalk shall be left in an unsafe condition unless lighted and guarded by the CONTRACTOR at his expense. Where abutting surfaces of concrete or material are disturbed beyond the limits of adjustment or beyond the limits of contract, the CONTRACTOR shall replace the same at his own expense. If reinforced concrete walks and/or drives are encountered during removal, they shall be included as part of this item. The edges of existing concrete surfaces that are to receive new replacement materials shall be saw-cut along even lines and shall be cut back to obtain clean, sound vertical edges of the abutting material.

All saw-cutting of concrete shall be done at no extra cost and shall be considered as incidental to the work within this item unless there is a separate and/or specific pay item listed for saw-cutting elsewhere in this contract.

**MEASUREMENT:** Measurement shall be the number of square yards removed and disposed, regardless of the depth of concrete excavated, in a manner satisfactory to the OWNER. This quantity shall be measured in the field by the OWNER.

Failure to allow ample time for the OWNER to make the required measurements will forfeit the CONTRACTOR'S right-of-claim to any concrete excavation other than that allowed by the OWNER.

**PAYMENT:** Payment shall be made for the number of square yards of concrete removed, regardless of depth, based on the OWNER'S field measurements. Payment shall be at the Contract unit price for ITEM 127.000 as set forth in the Bid. Saw-cutting shall be considered as incidental to the work within this item. No separate payment shall be made for saw-cutting concrete unless otherwise specified elsewhere within this contract.

**Payment Items**

127.000	Concrete Sidewalk Excavation	Square Yards
120.100	Unclassified Excavation	Cubic Yards

## GRAVEL BORROW

**GENERAL:** This work shall consist of furnishing and placing ordinary gravel borrow in accordance with these Specifications, and/or as required by the OWNER.

**MATERIALS:** Gravel borrow shall consist of hard durable stone and coarse sand free from loam and clay, well graded and containing no stone having any dimension greater than two (2) inches (type C), as per Section M1.03.0 of the Commonwealth of Massachusetts Standard Specifications, including any and all addenda. The gravel borrow shall conform to the following sieve requirements:

<u>SIEVE</u>	<u>% PASSING</u>
1/2"	50 - 85
#4	40 - 75
#50	08 - 28
#200	0 - 08

The gravel shall be tested for sieve analysis at the plant prior to delivery on the job site. The written results shall be given to the inspector for the city for approval prior to delivery. Failure to do so may result in the refusal of the material by the City. All costs incurred shall be paid for by the CONTRACTOR at no cost to the City.

The gravel borrow shall be placed in six inch (maximum) layers and then compacted to not less than 95% of maximum optimum density as determined by AASHO Test Designation: T99-57, Method C.

Crusher run may be substituted in place of gravel borrow if desired by the CONTRACTOR and so approved by the OWNER. Crusher run shall be paid for at the same unit price as gravel borrow. The conversion factor used in determining the quantity of crusher run substituted shall be one and one-half tons of crusher run is equivalent to one cubic yard of crusher run.

**MEASUREMENT:** Measurement for gravel borrow shall be the number of cubic yards furnished, placed, and accepted in accordance with these specifications and/or as required by the OWNER. The number of cubic yards in place and accepted shall be measured or calculated by the OWNER. Fifteen percent shall be added to the figure for compaction. Only gravel borrow placed within the established pay limit necessary to complete the work as required by the OWNER shall be considered for payment. If, in the opinion of the OWNER, the CONTRACTOR has excavated areas to an excessive width and/or depth, either through error or for his own convenience, the gravel borrow used to refill trenches beyond said reasonable width or depth shall be paid for by the CONTRACTOR with no cost to the City.

Failure to allow the OWNER ample time to make the required measurements will forfeit the CONTRACTOR'S right of claim to any gravel borrow other than that which is allowed by the OWNER.

**PAYMENT:** Payment for gravel borrow shall be made for the number of cubic yards furnished, placed, and accepted as determined above at the contract unit prices for ITEMS 151.000 & 151.220 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and placing all materials, all equipment, tools, labor, backfilling operations and all else incidental thereto. Fine grading and compaction shall be paid for under the applicable item of finish material (bituminous concrete or cement concrete).

On-site gravel, if requested by the OWNER, shall be saved for re-use on the job. The gravel shall be excavated, stored (if required), and/or relocated on the site, all at no additional cost to the City. All work shall be done by the CONTRACTOR.

**Payment Items**

151.220	Gravel Borrow (Trench Repair, Sidewalks & Drives)	Cubic Yards
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**CRUSHER RUN**

**GENERAL:** This work shall consist of the furnishing and placing of a one-inch leveling layer of crusher run as required by the OWNER. Depth of crusher run shall be measured after compaction. Crusher run may also be provided as a base for granite curb if required by the OWNER.

**MEASUREMENT:** All crusher run used will be paid for on the basis of weight and shall be measured by tickets delivered with each load. The tickets shall clearly show the total, tare, and net weights. Loads represented by tickets not showing the weights as specified above will not be accepted for payment. Only crusher run placed at the required depth and within the limits specified will be accepted for payment.

**PAYMENT:** Payment for crusher run shall be made for the number of tons as determined above at the contract unit price for ITEM 151.900 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and placing of crusher run, and for furnishing all tools, labor, equipment and all else incidental thereto. Fine grading and compaction of crusher run shall be paid for under the applicable item of finish material (bituminous or cement concrete).

**Payment Item**

151.900

Crusher Run

Tons

## DRAINAGE STRUCTURE ADJUSTED

**GENERAL:** This work shall consist of adjusting OWNER'S existing frames and grates or covers of manholes and catch basins to newly proposed line and/or grade changes. **This item shall not apply to any new castings installed under item 222.010 or castings for new structures.** When the line and/or grade of an existing structure require a change of more than one foot vertically and/or horizontally, the structure shall be remodeled under ITEM 220.500.

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

After frames have been set and mortared, a cement concrete collar shall be constructed to the dimensions shown on the detail plans of the contract drawings. Cement concrete shall be 3000 psi with  $\frac{3}{4}$  inch stone. All work shall be done under the direction of the OWNER.

**PAYMENT:** Measurement for drainage structures adjusted shall be made based on a complete and accepted unit as determined from actual count by the OWNER.

Payment shall be made for each completed unit as determined above at the contract unit price for ITEM 220.000 as set forth in the Bid. Said price and payment shall be full compensation for all work including labor, materials, tools, equipment, mortar, brick, gravel, collars and all else necessary for final and satisfactory completion of the work within this item.

### Payment Items

220.000	Drainage Structure Adjusted	Each
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## **BITUMINOUS CONCRETE**

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

**MATERIALS:** Class I bituminous concrete pavement, Type I-1, shall conform to the requirements of Section 560.00 of the current Edition of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, Department of Public Works, including any addenda or amendments thereto. The City of Waltham has the option of requesting a modified state top when deemed necessary.

Bituminous concrete shall be spread at a temperature of not less than 225 degrees Fahrenheit and all initial rolling or tamping shall be performed when the temperature of the mixture is such that the sum of the air temperature plus the temperature of the mixture is between 300 and 375 degrees Fahrenheit. All mixtures shall be placed only when the atmospheric temperature is above 40 degrees Fahrenheit.

Bituminous concrete for wearing surfaces and base courses shall be spread in individual layers and compacted to the required lines, grades and cross section.

Rolling shall commence at the lower edges and shall progress toward the highest portion. Under no circumstances shall the center be rolled first. Each completed surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions, or irregularities.

Where new bituminous meets existing bituminous surfaces, an emulsifying agent shall be applied to seal the joint. A sand overcoat shall then be applied over the emulsifying agent.

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

**PAYMENT:** Payment for bituminous concrete shall be made for the number of tons as determined above at the Contract unit price for ITEMS 460.000, 460.100 and 460.300 as set forth in the Bid. Said price and payment shall be full compensation for all fine grading and compaction, for furnishing, spreading and

compacting bituminous concrete, emulsifying and sanding of all joints, and for furnishing all tools, labor, materials, equipment, and all else incidental thereto.

**Payment Items**

460.000

Class I Bituminous Concrete  
Type I-1 (Roadway)

Tons

## **GRANITE CURBING**

**GENERAL:** Under these items, the CONTRACTOR is to furnish and install new granite curbing, inlet stones, granite edging and curb corners. Curb shall be set on undisturbed earth to the lines and grades indicated on the Contract drawings and/or as required by the OWNER.

**MATERIALS:** All new granite curb, curb corners, and inlet stones and granite edging shall conform to the applicable requirements of the "Standard Specification for Highways and Bridges," Commonwealth of Massachusetts, including any addenda or amendments thereto with the exception of payment for crusher run. Crusher run for curbing shall be included as part of the applicable curb item. All granite curbing shall consist of at least ninety percent of six feet minimum lengths unless otherwise required by the OWNER.

Granite curb shall be hard, durable, fine to medium grain and free from seams that impair structural integrity. Color shall be light gray, highlighted by black flakes, similar to that installed on recent projects in Waltham. Curb for each location shall be fabricated from the same parent material by one manufacturer to give a uniform appearance. Natural variations characteristic of the deposit will be permitted. The top of the curb shall be polished. The sides shall be cut square, most specifically the top 6" of the face that faces the street.

Cement concrete shall be 2,500 psi, 3/4" stone.

**METHOD:** Granite edging shall be set in accordance with the "Commonwealth of Massachusetts Standard Specifications for Highways and Bridges."

A trench shall be excavated to a width of eighteen inches to the bottom of the proposed curb. Unless otherwise required by the OWNER, curb shall be set to the lines and grades shown on the plans and fitted together as closely as possible. Curb shall be saw cut, not broken, to required lengths. If requested by the OWNER, crusher run shall be added and hand tamped to fill any voids between the undisturbed earth and the bottom of the curb so the curb is supported along two points of its entire length. The center and both ends of each curb length shall be left open for cement concrete. On the day of the curb installation, 6" x 6" beds of cement concrete shall be poured front and back, and the concrete shall flow under the curb. Care shall be taken not to affect the line and/or grade of the curb. Joints between curbstones shall be filled with mortar and exposed surfaces shall be neatly pointed. At completion of work, curb shall be clean and free of cement spills. If curb is not clean, the OWNER may request that the curb be pressure washed, at no additional cost to the City.

Care should be taken to avoid placing concrete in areas selected for future placement of trees.

**MEASUREMENT:** Granite curb to be paid for will be the length actually furnished, set, completed and accepted in accordance with the Specifications and Contract Drawings and as measured along the outer radius of the curb. The quantity of new granite curb corners and inlet stones shall be on a unit basis for the actual number furnished and set in accordance with the Specifications and Contract Drawings.

**PAYMENT:** Payment for granite curb shall be made as determined above at the Contract unit prices for ITEMS 504.-- as set forth in the Bid. Said price and payment shall be full compensation for furnishing and setting new Type VA4 granite curb, furnishing and setting new Type A curb corners, furnishing and setting new inlet stones, all excavation, backfilling, cement concrete, and for furnishing all labor, tools, equipment, etc., and all else incidental to the satisfactory completion of the work included within these items.

**Payment Items**

504.000	Granite Curb Type VA4 Straight	Linear Foot
516.000	Granite Curb Corner-Type A (2'-0"radius)	Each
517.000	Granite Curb Corner-Type B (3'-0"radius)	Each

**CURB REMOVED AND RESET**

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

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

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

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

**Payment Item**

580.000	Curb Removed and Reset	Linear Foot
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**GENERAL:** This work shall consist of fine grading and compaction of gravel and/or crusher run and the furnishing and placing of cement concrete for sidewalks, driveways and aprons in accordance with these Specifications and/or as required by the OWNER. Depths of concrete shall be 4 inches (reinforced) in sidewalks and 6 inches (reinforced) in driveways, aprons and roundings and as required by the OWNER.

**MATERIALS:** 7% ( $\pm 1\frac{1}{2}\%$ ) air-entrained cement concrete (4,000 psi, 3/4" stone), borrow, and pre-formed joint fillers shall conform to the requirements of SECTION 701 of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts, Department of Public Works, 1988 Edition, including any addenda or amendments thereto, unless otherwise specified by the OWNER.

All concrete shall contain a fibrous concrete reinforcement of 100% virgin polypropylene fibrillated fibers of multi-design gradation as manufactured by Fibermesh, Synthetic Industries, 4019 Industry Drive, Chattanooga, Tennessee 37416 or an approved equal.

Wheelchair ramps shall include a prefabricated truncated dome modular system manufactured from high strength polymer concrete. Each accessible ramp shall have one panel 24 inches deep by 60 inches wide. The color of the panels shall be gray. The physical properties of the concrete panels shall meet the following requirements.

PROPERTY	VALUE
Water Absorption – ASTM D570	$\leq 0.35\%$
Slip Resistance – ASTM C1028	$\geq 0.80$
Abrasive Wear – ASTM D2486	BYK Gardner Tester $\leq 0.03/1,000$ cycles
Accelerated Weathering – ASTM G26	$\geq 2,000$ hours no fading
Chemical Stain Resistance – ASTM D543	no discoloration
Gardener Impact – ASTM D5420	$\geq 450$ in. lbf/in.
Compressive Strength – ASTM D695	$\geq 18,000$ psi

Tactile warning panels shall be installed in accordance with the manufacturer's recommendations and tamped into the fresh concrete and made flush with the surrounding surfaces. Concrete masonry blocks may be needed to insure continuous contact with the panel's underside with the concrete. Panels shall be protected from damage and concrete and asphalt spatter. Surfaces shall be cleaned as recommended by the manufacturer.

The concrete of the surrounding ramp shall be finished true and smooth to the required dimensions and slope before the tactile warning panel is installed. The panel shall be placed true and square to the curb line.

**METHODS:** Methods shall conform to the aforesaid, unless otherwise required by the OWNER. All transverse joints shall be formed with a 1/2" wide by 1" deep jointing tool such as the Marshall Town No. 836 jointing tool or the equivalent. All transverse joints shall be measured and divided equally and separately between the expansion joint distances. Continuous concrete blocks shall be no longer than 30 feet.

Concrete shall have a broom finish. A colored curing agent or retardant approved by the OWNER shall be applied to the finished concrete if requested by the OWNER. Otherwise, the curing method shall be as prescribed in Section 476.71A of the Mass. Standard Specifications.

The CONTRACTOR shall be responsible for the guarding of the wet concrete until it has sufficiently set up in place. The CONTRACTOR shall assume responsibility for replacing any concrete that is damaged due to cracking or vandalism. Replacement of concrete including saw cutting, removal and disposal of rejected concrete shall be done at the CONTRACTOR'S expense with no additional cost to the City. The CONTRACTOR maintains responsibility for the concrete for one year after the completion of the entire contract as noted in the Specifications of these documents (Section 6 Paragraph 8)

**MEASUREMENT:** Measurement for concrete sidewalks, drives and aprons shall be the number of square yards furnished, placed and accepted based on the OWNER'S field measurements or office calculations. Only cement concrete placed at the required depths and within the limits specified by the OWNER shall be accepted for payment.

**PAYMENT:** Payment for cement concrete sidewalks, drives and aprons shall be made for the number of square yards furnished, placed and accepted as determined above at the Contract unit prices for ITEMS 701.050 & 701.150 as set forth in the Bid. Said price and payment shall be full compensation for all fine-grading and compacting, for all necessary form work and materials including tactile warning strips and forming of tree wells for future plantings, for furnishing and placing of cement concrete and additives, including fibrous reinforcement and heating charges, for furnishing and applying all curing and/or retarding agents, and for furnishing all tools, equipment, labor, materials, and all else incidental thereto.

**Payment Items**

701.050	Cement Concrete Sidewalks (4" Fibrous Reinforced)	Square Yards
701.150	Cement Concrete Drives, Aprons and Ramps (6" Fibrous Reinforced)	Square Yards

## LOAM BORROW

**GENERAL:** This work shall consist of furnishing and placing loam borrow at the required depths and on approved areas in accordance with these Specifications, as indicated on the Contract Drawings, and/or as required by the OWNER. Only screened loam will be accepted for use.

All grass areas worked on or disturbed during construction and/or grassed areas shown on the Contract Drawings shall be graded to the necessary depths and covered with loam. The loam shall be fertile natural topsoil loam free from brush, weeds, stumps roots, stones over ½ inch in size, and any other objectionable matter. 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.

**METHOD:** In sidewalk loam areas, loam shall be placed and uniformly spread on the sub-grade. When raked out and rolled, the depth of the loam shall be six inches. The finished surface shall be even with the top of the curb and the face of the sidewalk.

If loam is required in adjustment areas, it shall be placed at the depths indicated by the OWNER, but not to exceed 3 inches maximum depth.

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

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

### Payment Items

751.000	Loam Borrow	Cubic Yards
765.650	Hydroseeding	Square Yards
120.100	Unclassified Excavation	Cubic Yards



## SEEDING

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

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

	Proportion	Germinative	Purity
Creeping Red Fescue	50%	85%	95%
Kentucky Blue	25%	85%	90%
Domestic Rye	10%	90%	98%
Red Top	10%	85%	92%
Ladino Clover	5%	85%	96%

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

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

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

### Payment Items

765.650	Hydroseeding	Square Yard
751.000	Loam Borrow	Cubic Yard

**SAFETY SIGNING**  
**FOR CONSTRUCTION**  
**OPERATIONS**

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

**MATERIALS AND METHODS:** Materials required under this section need not be new but must be in excellent condition. Any materials that in the judgment of the OWNER are unsatisfactory in appearance or performance shall be removed and immediately replaced by acceptable units at no additional cost to the City. Signs that are missing shall be immediately replaced by the CONTRACTOR at no additional cost to the City. Signs that are not consistent with the use of the roadway shall be removed or covered. All work shall be done by the CONTRACTOR and to the satisfaction of the OWNER.

Materials shall conform to Sections 828 and 840 of the Commonwealth of Massachusetts Standard Specifications except the plywood material shall conform to the following: Plywood sign panels shall be fabricated from five-ply 5/8" thick Medium Density Overlaid Exterior Type, A-B both sides surface in natural color and the whole conforming with the requirements and tests for the above as set forth in U. S. product Standard PS1-74 for Construction and Industrial Plywood. Plywood shall bear the grade trade mark of an approved testing agency. The entire sign face shall be reflectorized with reflective sheeting conforming to M9.30.0, type III of the Commonwealth of Massachusetts Standard Specifications.

Background sheeting shall be fluorescent orange. The maximum spectral radiance factor, in accordance with Section 5.1 of ASTM E991 for the fluorescence shall be 110% minimum for new signs and 60% minimum for weathered signs. Actual size and legend shall be determined by the OWNER.

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

**PAYMENT:** Payment for Safety Signing for Construction Operations shall be made based on the square foot area as determined above at the Contract unit price for ITEM 850.221 as set forth in the Bid. Said

price and payment shall be full compensation for furnishing, maintaining, repositioning, removing and storing signs, including all labor, equipment, tools, cement concrete, if required, and all else incidental to the satisfactory completion of the work within this item. All work is subject to approval by the OWNER.

**Payment Items**

850.221	Safety Signing for Construction Operations Square Foot
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## THERMOPLASTIC

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

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

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

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

### Payment Items

864.040	Pavement Handicap 36 in. Legends Reflectorized Thermoplastic	Each
868.040	4" Reflectorized Thermoplastic Line	Linear Foot

## **ADDITIONAL SPECIFICATIONS**

**LIGHTING:** SEE ATTACHED SPECIFICATION AND DRAWING SUPPLIED BY MANUFACTURE. CONTRACTOR TO INSTALL 12 FOOT DECORATIVE LIGHTING FIXTURES AND SUPPLY CONDUIT, WIRING, PRE-CAST SUB-BASE AND LABOR. THE CITY WILL SUPPLY THE 12 FOOT 80W LED DECORATIVE LIGHTING FIXTURES. PERMITS AND INSPECTIONS ARE REQUIRED AND FEES WILL BE WAIVED PER WIRES DEPARTMENT.

20 TOTAL – SPRUCE STREET LOT (5), WALNUT STREET LOT (15)

ALL EXISTING LIGHT POLES AND FIXTURES BEING REMOVED ARE PROPERTY OF THE CITY OF WALTHAM AND NEED TO BE DELIVERED TO WIRES DEPARTMENT LOCATED AT 155 REAR LEXINGTON STREET. CORRDATE WITH WIRES INSPECTOR BEFORE DROPPING OFF.

**SPACE NUMBER POST:** (ALL SIGNAGE WILL BE FURNISHED AND INSTALLED BY CITY)

3 FOOT HIGH 2 ¼" X 2 ¼" SQUARE 12 GAUGE PERFORATED ANCHOR – POWDER COATED BLACK

5 FOOT HIGH 2"X 2" SQUARE QUICK PUNCH 14 GAUGE POST – POWDER COATED BLACK

2" X 2" SQUARE RAIN CAP – POWDER COATED BLACK

2 ½" CORNER BOLT TO ATTACHED ANCHOR TO POST

**SIGN POST:** (ALL SIGNAGE WILL BE FURNISHED AND INSTALLED BY CITY)

3 FOOT HIGH 2 ¼" X 2 ¼" SQUARE 12 GAUGE PERFORATED ANCHOR – POWDER COATED BLACK

10 FOOT HIGH 2"X 2" SQUARE QUICK PUNCH 14 GAUGE POST – POWDER COATED BLACK

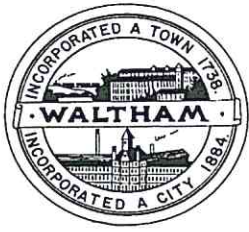
2" X 2" SQUARE RAIN CAP – POWDER COATED BLACK

2 ½" CORNER BOLT TO ATTACHED ANCHOR TO POST

**CONCRETE PAD FOR PAY-BY-SPACE MACHINE:** SEE ATTACHED SPECIFICATIONS AND DRAWINGS SUPPLIED BY MANUFACTURE.

8 - MISCELLANEOUS DETAIL DRAWINGS  
AND DOCUMENTS FOR

RECONSTRUCTION OF SPRUCE  
STREET AND WALNUT STREET  
PARKING LOTS



*CITY OF WALTHAM  
MASSACHUSETT*

*WIRES DEPARTMENT*

*INSPECTOR OF WIRES  
Timothy P. Kelly  
TKELLYA@CITY.WALTHAM.MA.US*

*SR. WIRE INSPECTOR  
George A. Martin  
GMARTIN@CITY.WALTHAM.MA.US*

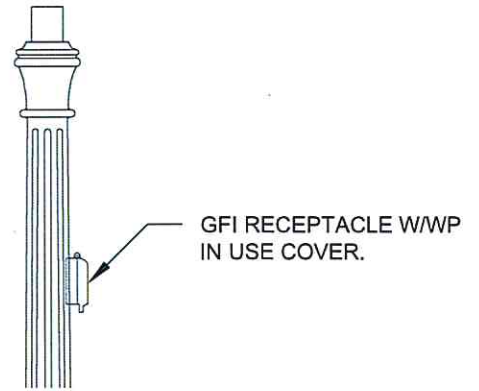
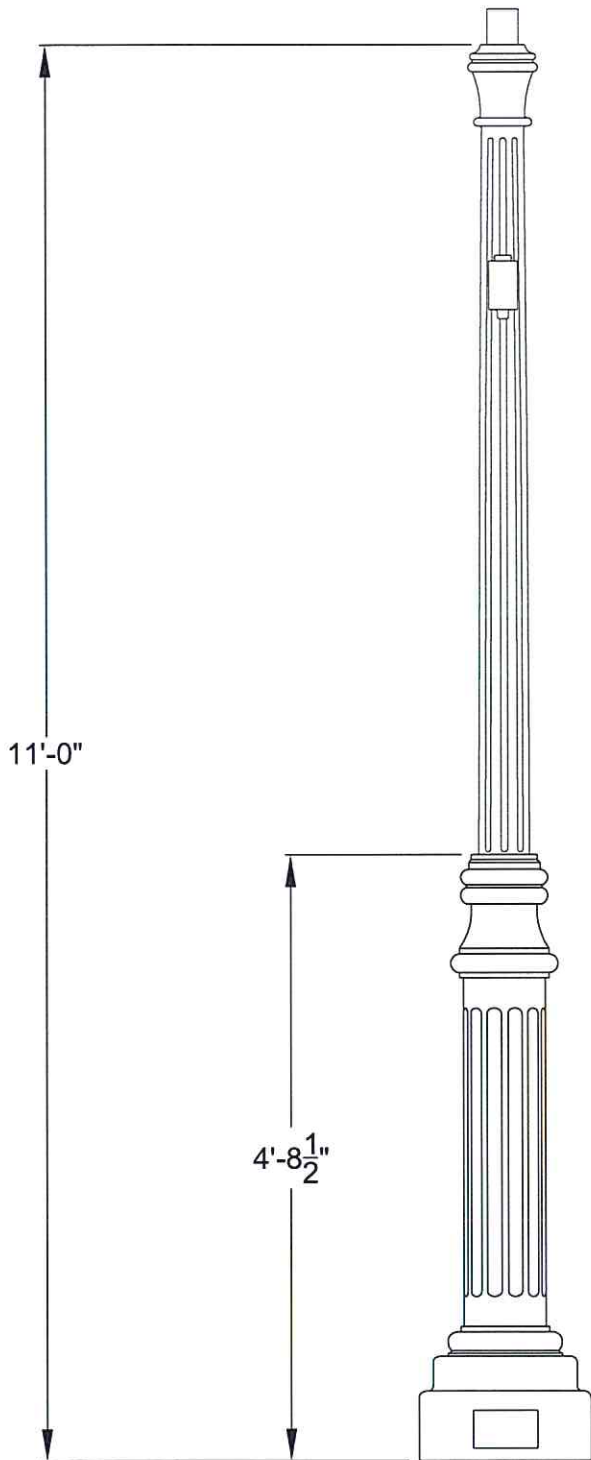
*MEMBER  
I.A.E.I.  
MUNI. ELEC. INSP. ASSOC.  
OF M.A. R.I.  
N.F.P.A.  
I.M.S.A.*

Electrical specifications for the Spruce and Walnut Street parking lot lights.

PVC conduit shall be 1 inch trade size schedule 80

Conductors shall be a minimum size # 8awg, consisting of a hot, neutral and equipment ground.

All trenches shall be 24 inch deep and are subject to inspection before being backfilled, clean fill and magnetic tape shall be installed.



**POLE SPECIFICATIONS**

**MANUFACTURER:** ALLOY CASTINGS Co., INC.  
**STYLE:** HANCOCK SERIES  
**MODEL No.:** ACDP-P-11'0"-GFCIIU-BK  
**HEIGHT:** 11'-0" OVERALL POST HEIGHT  
**BASE DIAMETER:** 16"  
**TENON:** 3 1/2" DIA x 3" TALL  
**MATERIAL:** HEAVY WALL CAST ALUMINUM 356 ALLOY  
**FINISH:** GLOSS BLACK ENAMEL  
**ANCHOR BOLTS:** 3/4" DIA. x 24"L + 3" HOOK H.D.GALVANIZED

**ALLOY CASTINGS CO., INC.**  
 151 WEST UNION STREET  
 EAST BRIDGEWATER, MA 02333  
 PHONE: (508) 378-2541  
 FAX: (508) 378-1240

**DESCRIPTION:**  
 11' HANCOCK POST

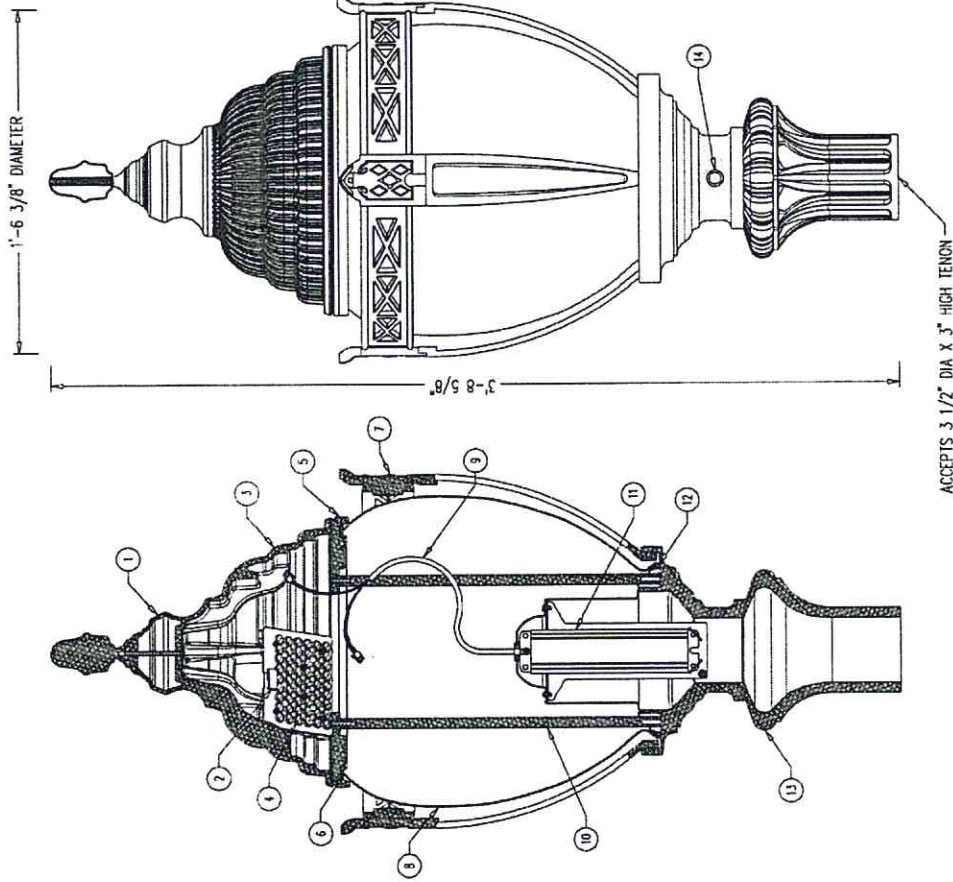
**CUSTOMER:**  
 CITY OF WALTHAM

**DATE:**  
 03-06-2014

PDF



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ACCEPTS 3 1/2" DIA X 3" HIGH TENON

1) FINIAL: CAST ALUMINUM, 356 ALLOY, SECURED WITH (1) 1/4"-20 ROUND HEAD MACHINE SCREW

2) CROSSFIRE™ OPTIONAL OPTICAL SYSTEM: INJECTION MOLDED REFRACTIVE OPTICS

3) COOLCAST™ HEAT DISSIPATING ROOF: CAST ALUMINUM, 356 ALLOY, SECURED WITH (4) 10-24 ROUND HEAD MACHINE SCREWS

4) CREE XT-E LED - 54 CHIPS PER BOARD TO PRODUCE 170 WATTS

5) LUMINAIRE ROOF RING: CAST ALUMINUM, 356 ALLOY

6) SILICONE GASKET: ONE PIECE MOLDED GASKET TO SEAL THE LUMINAIRE RING TO THE ROOF AND GLOBE

7) DECORATIVE TARBORO RING AND STRUTS: CAST ALUMINUM, 356 ALLOY

8) GLOBE: DAMAGE RESISTANT 118 STIPPLED ACRYLIC

9) POWER CABLE: BUNDLED POWER CABLE WIRE WITH QUICK DISCONNECTS

10) IIE-HOD: (2) MACHINED ALUMINUM STAND OFF TO SECURE LUMINAIRE RING AND GLOBE TO CASING

11) LED DRIVER: LOCATED IN SPUN HOUSING WIRED AT 700mA (SPLIT CURRENT)

12) GASKET: SILICONE GASKET TO SEAL GLOBE TO LUMINAIRE CASING

13) LUMINAIRE CASING: CAST ALUMINUM, 356 ALLOY

14) BUTTON-TYPE PHOTO CELL (SEE QUANTITY FOR VOLTAGE)

### LUMINAIRE SPECIFICATIONS:

STYLE: WASHINGTON WITH 110 ALUMINUM FINIAL

HEIGHT: 3'-8 5/8"

WIDTH: 1'-6 3/8" DIAMETER

MATERIAL: CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95

FINISH: POWDER COAT - GLOSS BLACK

LAMPING: 80 WATT LED

VOLTAGE: PLEASE SEE QUANTITY FOR VOLTAGE

NUM. OF BOARDS: 2

COLOR TEMP: 4500K (NEUTRAL WHITE)

DISTRIBUTION: TYPE III (ASYMMETRIC)

OPTICS: CROSSFIRE REFRACTIVE

GLOBE: 118 STIPPLED OR ACRYLIC

ELECTRICAL: BUTTON-TYPE PHOTO CELL

MODIFIER: TARBORO RING AND STRUTS

CATALOG NO. ALMWSH-LE80/EV\_F/12-45-CR3-YS11-FPA-1B-BT-CU

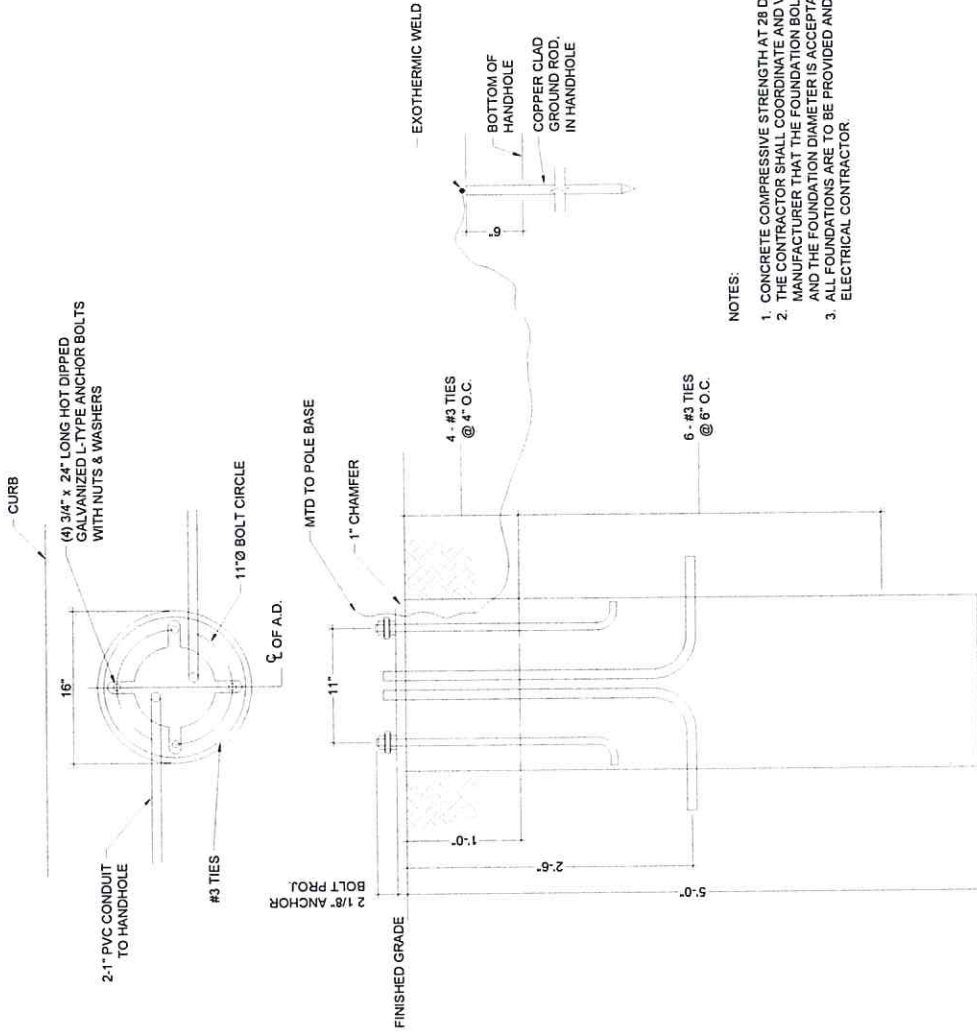


Spring City Electrical Mfg. Co.

HALL AND MAIN STREETS - P.O. BOX 19 - SPRING CITY, PA. 19415  
PHONE (610) 948-0000 - FAX (610) 948-5577 - WWW.SPRINGCITY.MFG.COM

DESCRIPTION	THE WASHINGTON LED LUMINAIRE WITH TARBORO RING AND STRUTS		
CUSTOMER	CITY OF WALTHAM, MA		
JOB	MAIN STREET		
SCALE	DRAWN BY:	DATE	DRAWING NO.
N.T.S.	MWC	10-31-13	FIX-2867A

# Foundation Detail - Waltham MA



**NOTES:**

1. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS,  $F_{c'} = 3000$  psi (Min.)
2. THE CONTRACTOR SHALL COORDINATE AND VERIFY WITH THE POLE MANUFACTURER THAT THE FOUNDATION BOLT POSITIONS ARE ACCURATE, AND THE FOUNDATION DIAMETER IS ACCEPTABLE TO THE ENGINEER.
3. ALL FOUNDATIONS ARE TO BE PROVIDED AND COORDINATED BY THE ELECTRICAL CONTRACTOR.

**CONCRETE FOUNDATION**

## SUBGRADE SOILS.....

Proper base preparation is a critical element in the construction of your retaining wall. Not only is it important to provide a stable foundation for the wall, but a properly prepared base will greatly increase the speed and efficiency of your wall installation. Proper base preparation starts with the subgrade soils.

Existing soils must be removed to the bottom of the leveling pad elevation for the retaining wall. **(Figure 3)**

The base and back of excavation should expose fresh, undisturbed soil or rock. Remove all disturbed soils which "fall-in" along the base of the wall or the back of the excavation.

The subgrade soil (below the leveling pad) should be evaluated by the Professional Engineer responsible for the wall to make sure it meets the design requirements and to determine its adequacy to support the retaining wall. Any unsuitable material shall be excavated and replaced as directed. Subgrade soils must be compacted to a minimum of 95% maximum density as determined by a standard proctor test (ASTM D698).

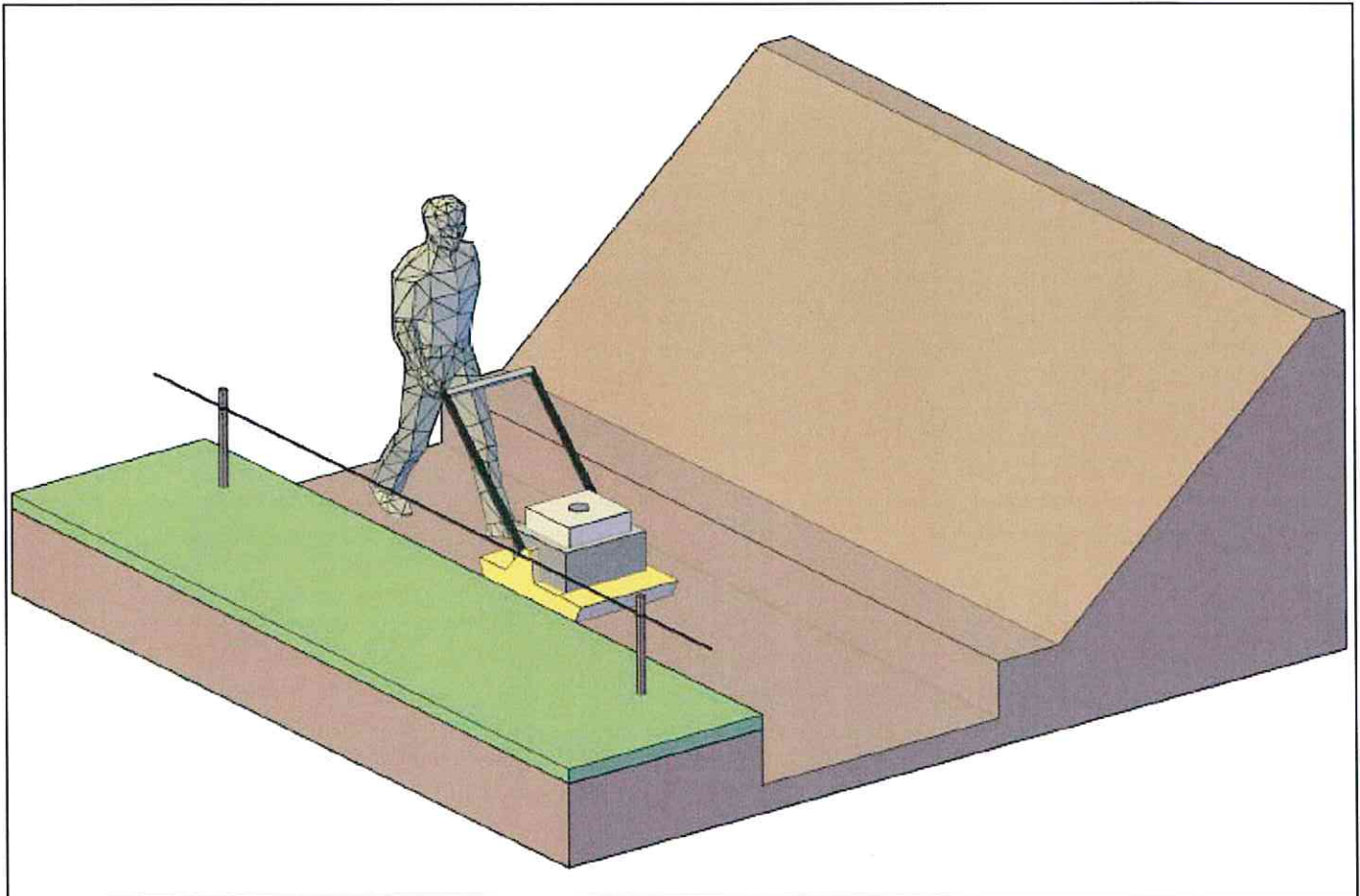


Figure 3

## LEVELING PAD.....

Base preparation continues with proper leveling pad construction. Redi-Rock retaining walls can be designed with an open-graded crushed stone, dense-graded crushed stone (GAB), or concrete leveling pad which supports the bottom row of blocks. The choice of which type of leveling pad to use is made by the wall designer and depends on several factors including the bearing capacity of the native soil, location of the drain outlet, conditions at the base of the wall, and any other special considerations for the wall.

### OPEN-GRADED CRUSHED STONE LEVELING PAD

The most common type of leveling pad is made using an open-graded crushed stone with a drain located in the bottom of the stone. (Figure 4) This is the method that is shown in most Redi-Rock preliminary or conceptual drawings. An open-graded crushed stone leveling pad assumes that the wall drain can drain to daylight (by gravity) somewhere on the site below the elevation of the bottom of the leveling pad. If you cannot outlet the wall drain below the elevation of the bottom of the leveling pad, you should not use open-graded crushed stone. Water will become trapped below the drain outlet, weakening the base of your retaining wall and causing other problems.

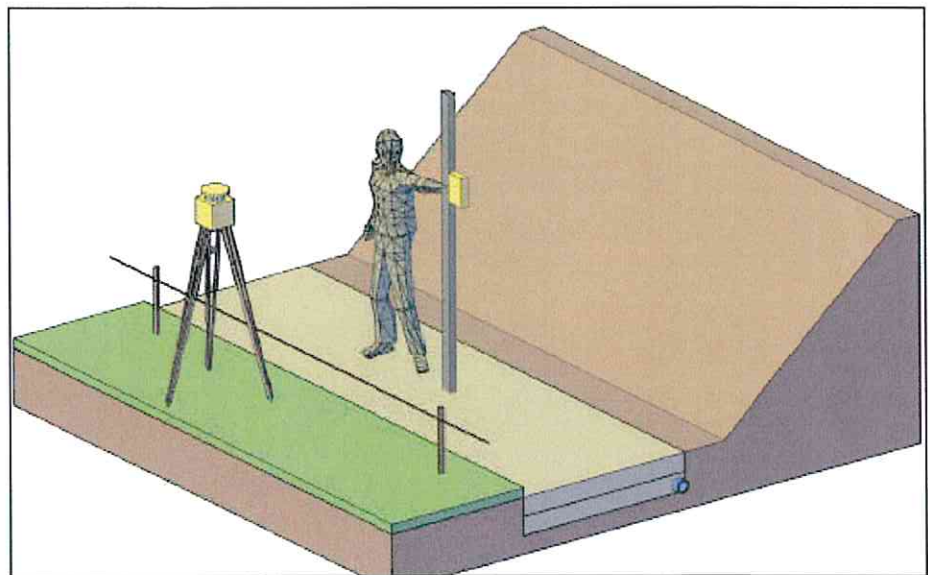


Figure 4

Leveling pad material should be washed, crushed stone, 1 inch diameter and smaller. A crushed stone meeting the gradation requirements of ASTM No. 57 with no material passing the No. 200 sieve is preferred. The leveling pad thickness shall be as designed by the Professional Engineer. A minimum thickness of 6" or 12" is common. The leveling pad should extend at least 6" in front and 12" behind the bottom block. Make sure to check your plans.

A drain is placed in the bottom of the leveling pad to provide an outlet for any water collected behind the wall. A 4" perforated sock drain is commonly used. The drain runs the entire length of the wall and must have proper outlets to provide drainage for the wall. (Figure 5)

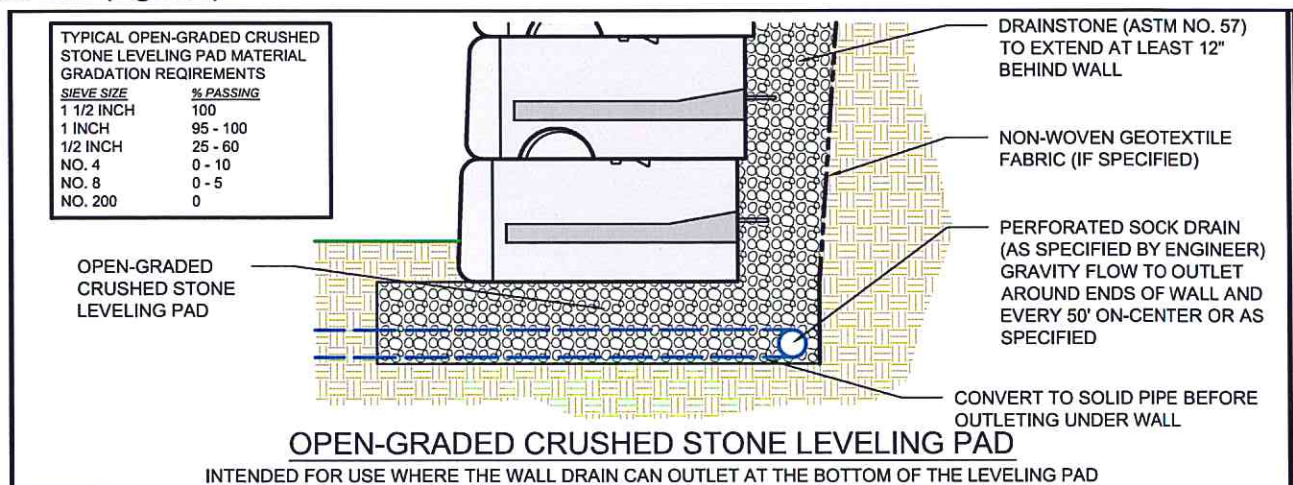


Figure 5

The leveling pad material should be placed and compacted to provide a uniform, level pad on which to construct the retaining wall. **(Figure 6)** Proper elevation can be established with a laser level or transit. You can also set two 20' long grade pipes to the desired grade and screed the crushed stone material between the pipes.

Place the stone leveling pad in uniform loose lifts a maximum of 6" thick. Consolidate the stone with a minimum of three passes with a 24" wide, walk-behind, vibrating plate compactor capable of delivering at least 2000 pounds of centrifugal force. This should achieve 90% relative density of the stone determined in accordance with ASTM D-4253 and D-4254. In place density of the stone fill should be confirmed using ASTM D-6938. If you don't achieve a minimum of 90% relative density, place the stone in smaller lifts or apply more compaction effort until you do achieve 90% relative density of the stone.

Do NOT place a thin layer of sand between the leveling pad and bottom block. This layer will reduce the sliding resistance between the leveling pad and bottom block.



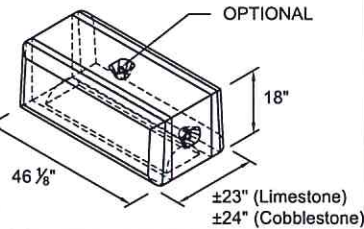
Figure 6

## FREESTANDING SERIES BLOCKS (FINISHED ON TWO SIDES)

### Straight Top

(Smooth or Textured)

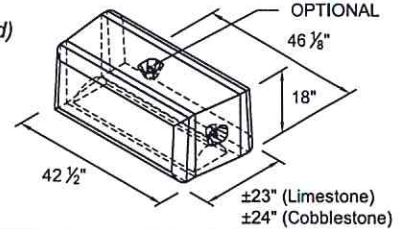
Full Block (46 1/8")  
Volume = 10.46 cft  
Weight = ±1496 lbs  
Half Block (23 1/16")  
Volume = 5.22 cft  
Weight = ±747 lbs



### Curved Top

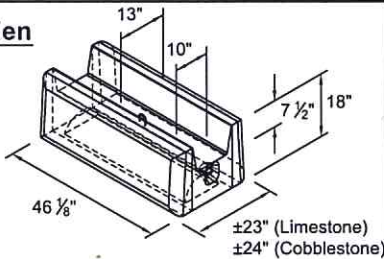
(Smooth or Textured)

Volume = 10.03 cft  
Weight = ±1434 lbs



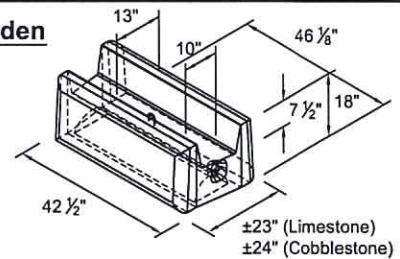
### Straight Top Garden

Full Block (46 1/8")  
Volume = 7.98 cft  
Weight = ±1141 lbs  
Half Block (23 1/16")  
Volume = 3.97 cft  
Weight = ±567 lbs



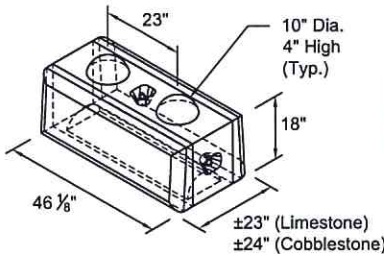
### Curved Top Garden

Volume = 7.65 cft  
Weight = ±1093 lbs



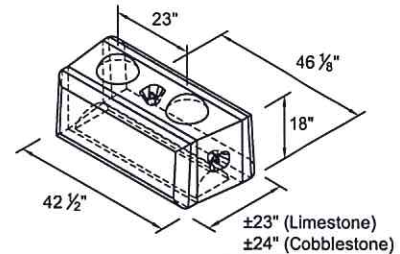
### Straight Middle

Full Block (46 1/8")  
Volume = 10.68 cft  
Weight = ±1527 lbs  
Half Block (23 1/16")  
Volume = 5.33 cft  
Weight = ±762 lbs



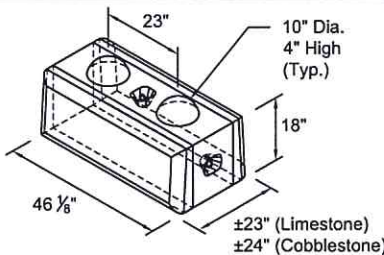
### Curved Middle

Volume = 10.24 cft  
Weight = ±1465 lbs



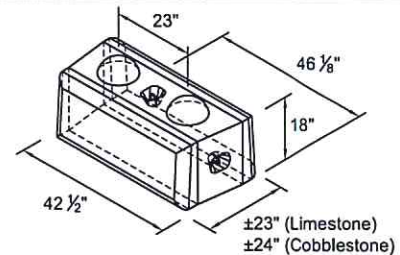
### Straight Bottom

Full Block (46 1/8")  
Volume = 11.53 cft  
Weight = ±1649 lbs  
Half Block (23 1/16")  
Volume = 5.74 cft  
Weight = ±821 lbs



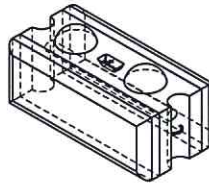
### Curved Bottom

Volume = 11.10 cft  
Weight = ±1588 lbs



### Force Protection

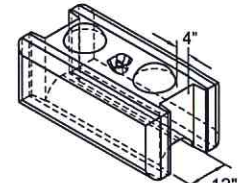
Straight blocks can be manufactured with a 3" horizontal tube for post-tensioned cable installation.  
Straight and curved blocks can be manufactured with 6" vertical tubes for mechanical tie-down bolt installation.



(Straight Full Bottom Block Shown)

### Variable Radius Walls

Straight block styles can be manufactured with the end block insert to allow the blocks to be used in a variable radius wall.



(Straight Full Middle Block Shown)

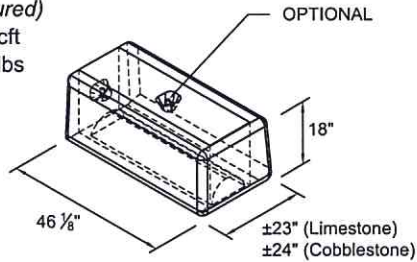
#### NOTES:

Architectural faces on the blocks have varying texture.  
Volumes are based on the blocks as shown.  
Actual weights and volumes may vary.  
Weight shown is based on 143 pcf concrete.

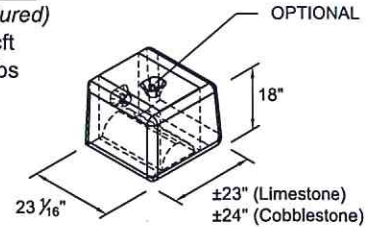
DRAWN BY J. JOHNSON	03/18/10	Redi-Rock® International, LLC	
CHECKED BY			
APPROVED BY		DRAWING FILE FS Series Blocks 031810.dwg	REVISION ---
ISSUE DATE		SCALE NO SCALE	SHEET NO. 1 OF 1

## FREESTANDING SERIES CORNERS (FINISHED ON THREE SIDES)

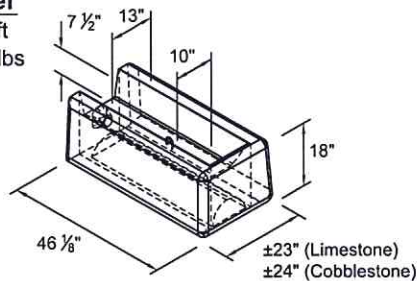
**Top Corner**  
(Smooth or Textured)  
Volume = 10.44 cft  
Weight = ±1493 lbs



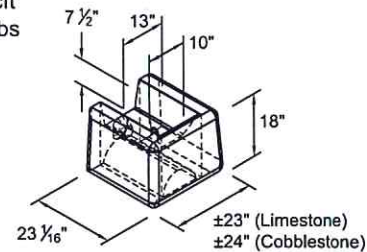
**Half Top Corner**  
(Smooth or Textured)  
Volume = 5.18 cft  
Weight = ±741 lbs



**Garden Corner**  
Volume = 8.26 cft  
Weight = ±1182 lbs

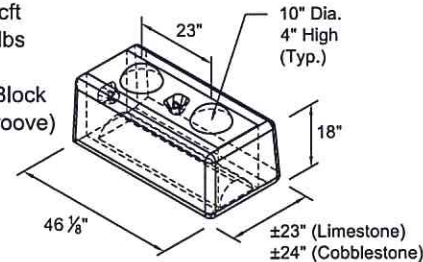


**Half Garden Corner**  
Volume = 4.25 cft  
Weight = ±607 lbs



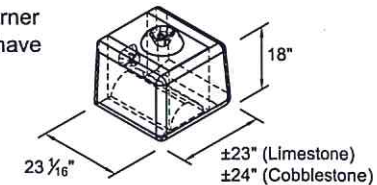
**Middle Corner**  
Volume = 10.73 cft  
Weight = ±1534 lbs

(Bottom Corner Block does not have groove)



**Half Middle Corner**  
Volume = 5.28 cft  
Weight = ±755 lbs

(Half Bottom Corner Block does not have groove)



**NOTES:**

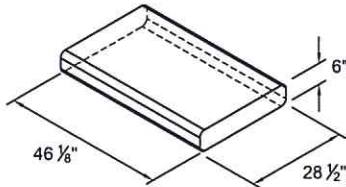
Architectural faces on the blocks have varying texture.  
Volumes are based on the blocks as shown.  
Actual weights and volumes may vary.  
Weight shown is based on 143 pcf concrete.

DRAWN BY J. JOHNSON	10/05/09	Redi-Rock® International, LLC	
CHECKED BY			
APPROVED BY		DRAWING FILE FS Series Corners 100509.dwg	REVISION —
ISSUE DATE		SCALE NO SCALE	SHEET NO. 1 OF 1

## 6" CAP BLOCKS

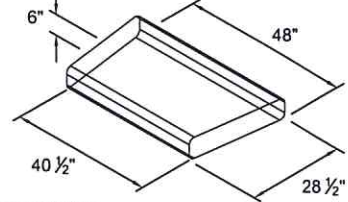
### Two-Sided Cap

Volume = 4.50 cft  
Weight = ±644 lbs



### Two-Sided Curve Cap

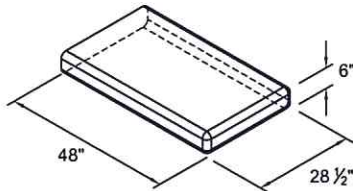
Volume = 4.25 cft  
Weight = ±608 lbs



Dimensions Updated 11/20/13

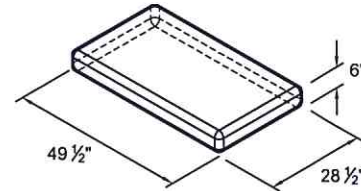
### Three-Sided Cap

Volume = 4.68 cft  
Weight = ±669 lbs



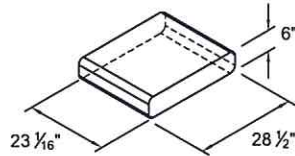
### Four-Sided Cap

Volume = 4.81 cft  
Weight = ±688 lbs



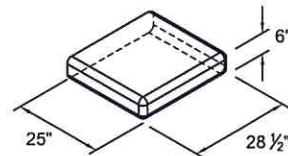
### Two-Sided Half

Volume = 2.25 cft  
Weight = ±322 lbs



### Three-Sided Half

Volume = 2.43 cft  
Weight = ±347 lbs



**NOTES:**

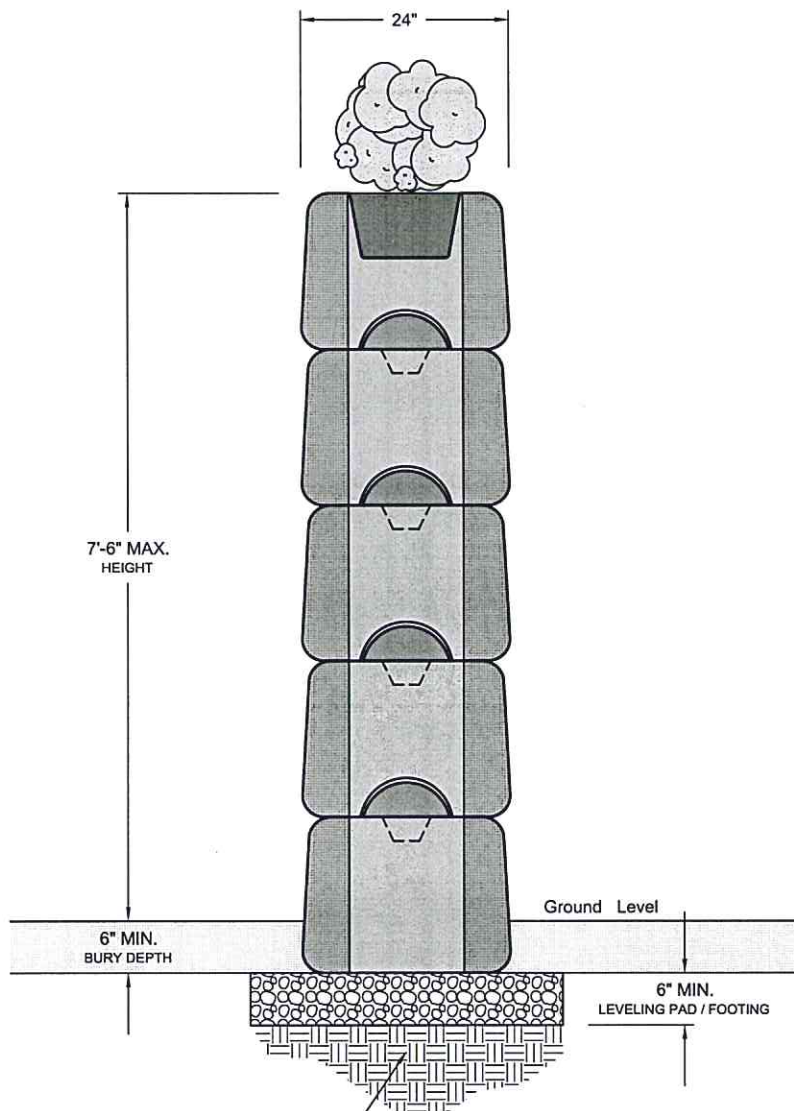
Volume based on blocks as shown.  
Actual weights and volumes may vary.  
Weight shown is based on 143 pcf concrete.

DRAWN BY J. JOHNSON	11/20/13	Redi-Rock® International, LLC	
CHECKED BY			
APPROVED BY		DRAWING FILE FS Series Cap Blocks 112013.dwg	REVISION —
ISSUE DATE		SCALE NO SCALE	SHEET NO. 1 OF 1

FREESTANDING



## Perimeter Freestanding Wall



Footing bearing material shall be granular and compacted to 95% of standard proctor, 90% of the modified proctor or in-situ compacted and tested to ensure adequate bearing capacity.

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CHECKED BY		DRAWING FILE FS GP 750 010410.dwg	REVISION —
APPROVED BY		SCALE NO SCALE	SHEET NO. 1 OF 1
ISSUE DATE			

### DENSE-GRADED CRUSHED STONE LEVELING PAD

If you cannot outlet the wall drain below the elevation of the bottom of the leveling pad, you need to construct the leveling pad from material which has a low permeability and will not trap water below the elevation of the drain outlet. In this case, a dense-graded crushed stone or graded aggregate base (GAB) material is typically used up to the elevation where the wall drain can gravity outlet through the face of the wall. (Figure 7)

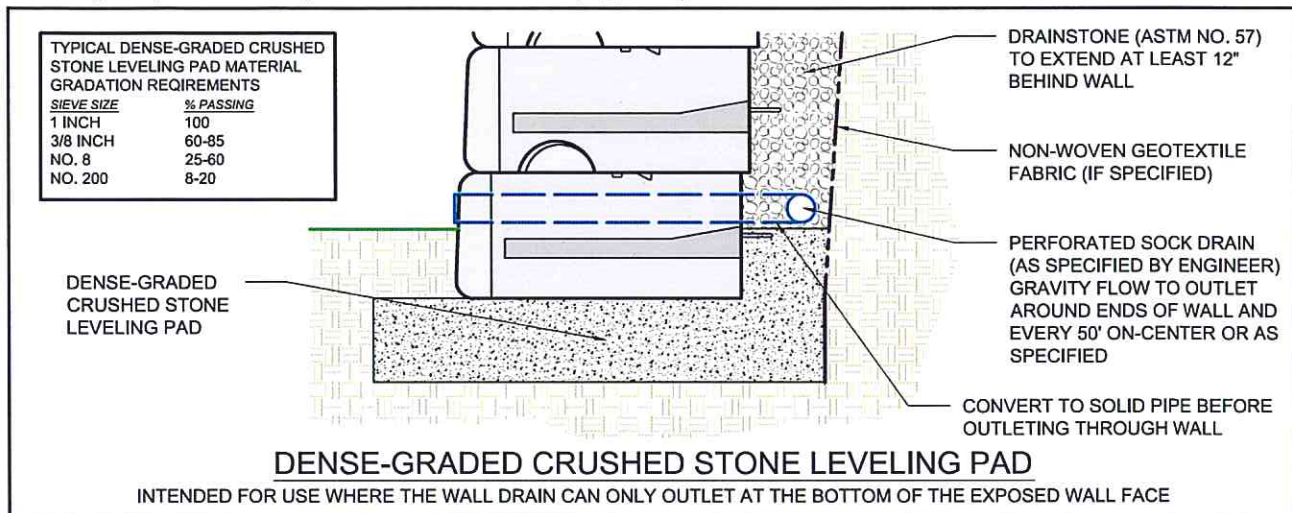


Figure 7

Leveling pad material should be dense-graded crushed stone with between 8 and 20% "fines" which will pass through a No. 200 sieve. The leveling pad thickness shall be as designed by the Professional Engineer. A minimum thickness of 6" or 12" is common. The leveling pad should extend at least 6" in front and 12" behind the bottom block. Make sure to check your plans.

Place the dense-graded crushed stone in uniform loose lifts a maximum of 6" thick. Consolidate the stone with a minimum of three passes with a 24" wide, walk-behind, vibrating plate compactor capable of delivering at least 2000 pounds of centrifugal force. This should achieve 90% relative density of the stone determined in accordance with ASTM D-4253 and D-4254. In place density of the stone fill should be confirmed using ASTM D-6938. If you don't achieve a minimum of 90% relative density, place the stone in smaller lifts or apply more compaction effort until you do achieve 90% relative density of the stone.

Make sure the dense-graded crushed stone is placed and compacted to provide a uniform, level pad on which to construct the retaining wall.

Place the bottom row of blocks on the leveling pad.

Continue wall construction as described in the section "SETTING THE WALL BLOCKS". However, use dense-graded crushed stone up to the elevation where the wall drain can gravity outlet through the face or at the ends of the retaining wall. At this elevation, place a wall drain to provide an outlet for any water collected behind the wall. A 4" perforated sock drain is commonly used. The drain runs the entire length of the wall and must have proper outlets to provide drainage for the wall.

There are two methods to outlet the drain through the face of the wall. The first method is to sawcut a small notch in the sides of two adjacent blocks. This makes a small hole for the drain outlet. Place the outlet pipe through the hole and seal the area between the pipe and Redi-Rock blocks with a non-shrink grout. The second method is to outlet the drain into small pipes cast through the Redi-Rock blocks. These blocks are custom, special order items. Please coordinate with your local Redi-Rock manufacturer.

Change from dense-graded to open-graded crushed stone from the elevation of the wall drain up through the rest of the wall. The stone should be placed as described in the section "SETTING THE WALL BLOCKS".

## CONCRETE LEVELING PAD

In some cases, the wall design requires the construction of a concrete leveling pad. **(Figure 8a)** Construct the leveling pad according to the detailed plans for your project.

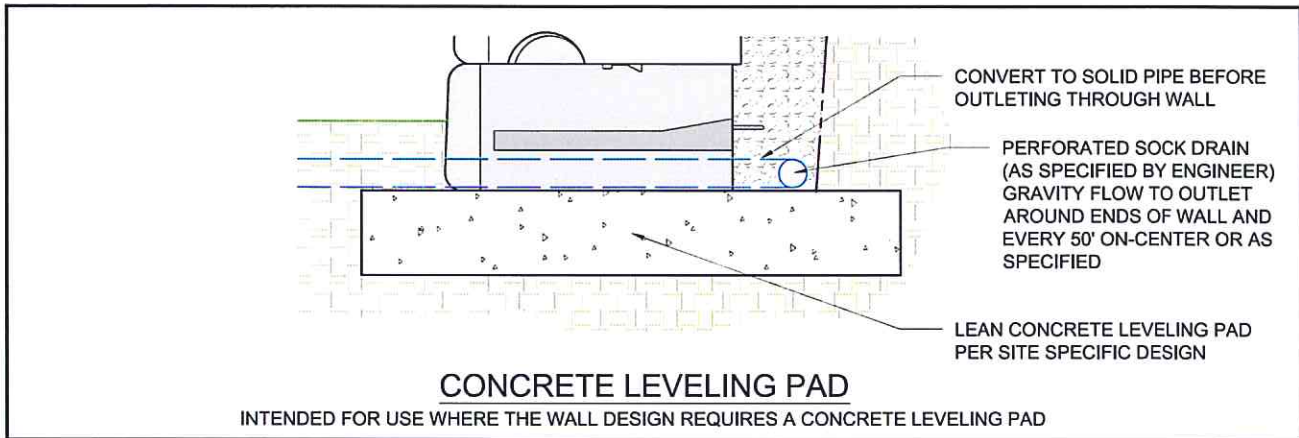


Figure 8a

Your design may also require a shear key in the bottom of the footing and/or a lip in front of the Redi-Rock blocks. These items would be shown in the project plans. **(Figure 8b)**

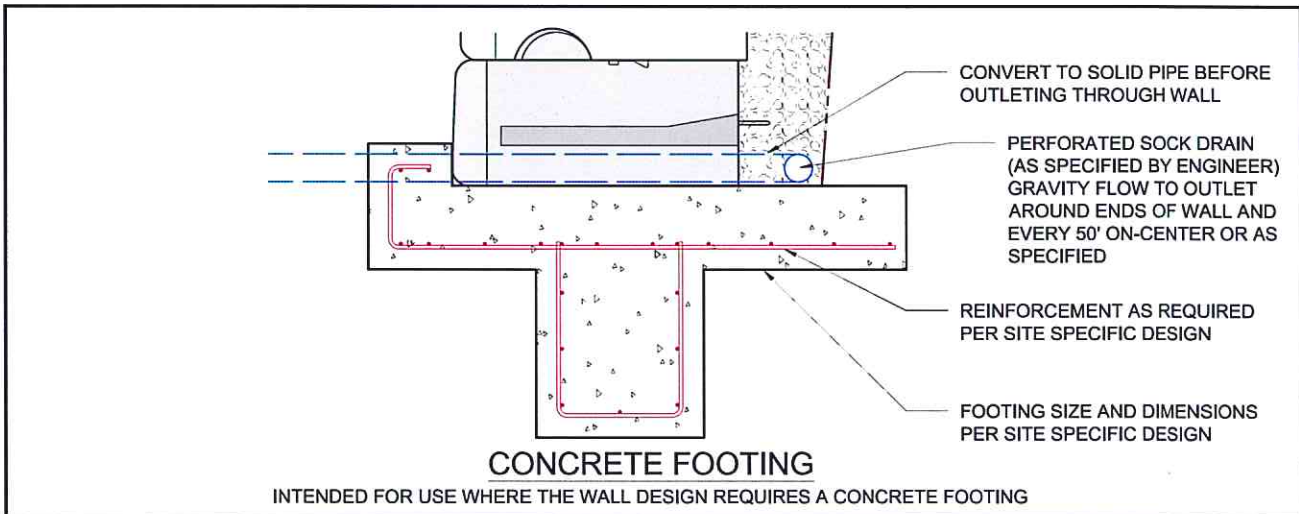


Figure 8b

If steel rebar is to be placed in the footing, secure the bars together with wire ties in the pattern shown in the wall design. Use rebar supports to hold the rebar structure in the proper position in the footing.

Place wood formwork at the front and back of the concrete leveling pad or footing. The top of the formwork should be placed at the elevation of the top of the concrete footing so you can screed the top smooth in preparation for block placement.

Place concrete as specified in the wall design.

Once the concrete has been allowed to cure to the minimum specified strength, place the bottom blocks and continue construction of the retaining wall.

A drain is placed on the top of the concrete footing to provide an outlet for any water collected behind the wall. A 4" perforated sock drain is common. The drain runs the entire length of the wall and must have proper outlets to provide drainage for the wall. Refer to the description in the *DENSE-GRADED CRUSHED STONE LEVELING PAD* section above for descriptions of how to outlet the wall drain through the face of the wall.

## SETTING THE BOTTOM ROW OF WALL BLOCKS.....

Redi-Rock blocks are typically delivered to the construction site using a flat bed trailer or boom truck. **(Figure 9)** Rubber tired backhoes, loaders, skid steers, or excavators are used to set the retaining wall blocks. **(Figure 10)** Redi-Rock blocks weigh up to 3,500 lbs. Make sure to use the proper sized equipment to handle the blocks. All lifting chains, rigging, or slings must be OSHA compliant and safety rated for proper working loads.



Figure 9



Figure 10

Properly mark the location of the retaining wall. A string line or offset stakes are typically used to establish horizontal and vertical alignment. If offset stakes are used, the stakes should be placed at least 5 feet but no more than 10 feet in front of the face of the retaining wall. A stake should be provided at every elevation change and at a maximum of 50 feet apart.

Place a complete row of blocks on the prepared leveling pad. Blocks shall be placed tight together. Block alignment should be established by lining up the "form line" where the face texture meets the steel form finished area at the top of the block, approximately 5 inches back from the front face. **(Figure 11)**

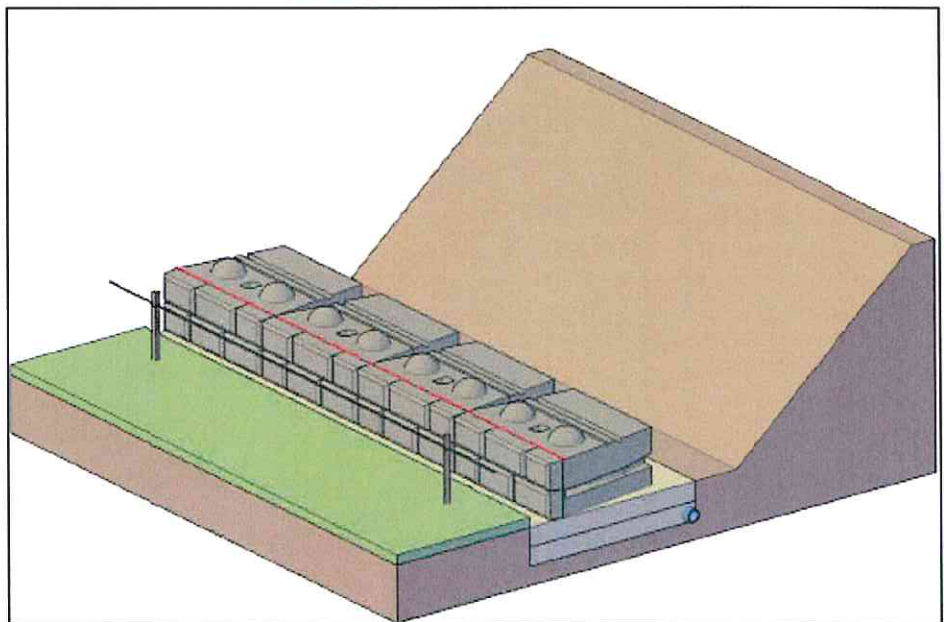


Figure 11

Check all blocks for level and alignment as they are placed. Small adjustments to the block location can be made with a large pry bar. If you take the time to set the bottom row properly, installation of the upper rows of blocks is much easier and more efficient.

**TIP: Wall construction should start at a fixed point such as a building wall, 90° corner, or at the lowest elevation of the wall.**

## STEPS IN A WALL.....

### STEPS IN THE TOP OF A WALL

Most walls have a grade change along the top of a wall which requires stepping down the top blocks. There are different options available to step down the top of a wall.

End blocks or garden corner blocks may be used to make a step-down. **(Figure 15)** If desired, the inside lip can be removed to allow the topsoil to fill to the edge of the block. To remove the lip, make one cut with a concrete saw and knock the lip off with a sledgehammer.

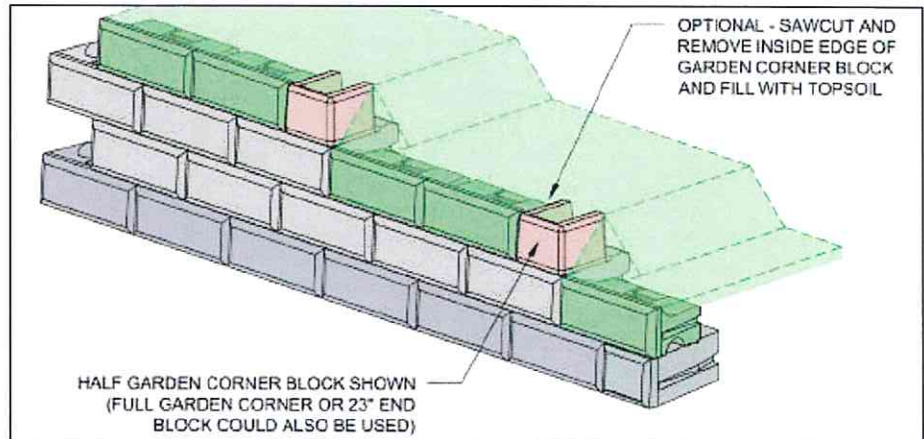


Figure 15

Top blocks may be placed in a radius to provide a scalloped look. **(Figure 16)** Two to four half blocks should be used. Remove the outside knob on the last middle block of the bottom course before beginning scallop. A concrete saw and sledgehammer can be used to remove the knob in the field.

Freestanding corner blocks can be used inline to step-down or finish the end of a wall. A Redi-Rock Step block or Cap Block can be used to provide a more finished look. **(Figures 17 and 18)**



Figure 16



Figure 17



Figure 18

### STEPS IN THE BOTTOM OF A WALL

Grade changes along the bottom of a wall can be accommodated by stepping the bottom row of blocks.

Steps in the bottom of a wall are relatively simple to make with either a crushed stone or concrete footing. A half bottom block is used to finish the bottom row before making the step. This accounts for the running bond between rows of blocks and keeps a middle block from being used at the bottom of the wall. **(Figure 19)**

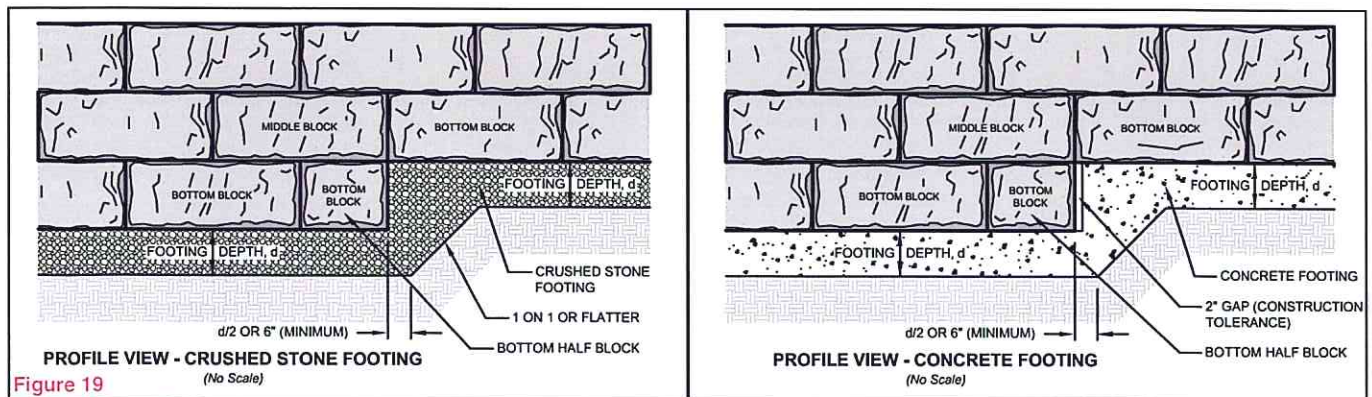


Figure 19

## CORNERS AND CURVES.....

Corners and curves can be made with Redi-Rock walls. Corners are typically constructed at 90° angles. Smaller or larger angles in the wall are typically made with curves.

### WALLS WITH 90° CORNERS

Corner freestanding blocks are used to make 90° corners. (Figure 20) If a standard corner block with a straight bottom groove and 6" diameter knobs is used, a small portion of the knob on the corner block and on the adjacent retaining wall block must be sawcut and removed for proper block alignment. If the special 90° corner block with a modified (wider) bottom groove and smaller knob is used, no sawcutting is required.

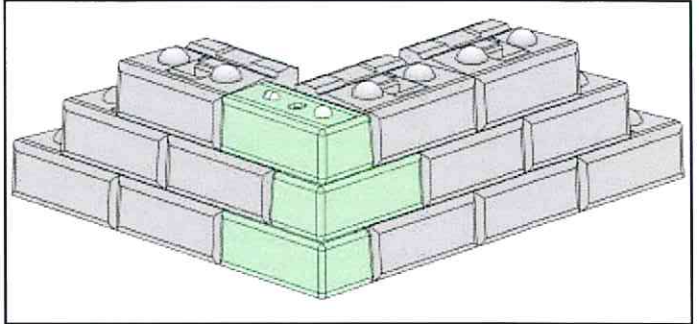


Figure 20

Start construction at the 90° corner and work away in both directions.

If a double 90° corner is to be constructed, special construction details must be followed to account for the effect of the wall batter.

There are several construction details available online at [www.redi-rock.com](http://www.redi-rock.com) which show examples of single and double 90° corners.

### CURVED WALLS

Curves can easily be incorporated into a Redi-Rock wall. (Figure 21)

Concave curves may be installed at varying radii. The blocks should be placed tight together to make a smooth curve.

Although there is no fixed minimum radius, smaller radii (lengths typically less than 14'-6") will result in exposing more of the untextured top face of the blocks in the underlying layer. This may not be visually desirable or acceptable. (Figure 22)



Figure 21

Convex curves may be installed at varying radii. Redi-Rock blocks are tapered on the sides. The smallest radius you can make with Redi-Rock blocks (without cutting the blocks) occurs when the blocks are placed together with their sides touching. The minimum radius for full size blocks is 14'-6" from the face of the blocks. A minimum radius of 8'-0" from the face of the blocks can be made if all half blocks are used. Note: you will not have a running bond joint between blocks if you use all half blocks.

When you are building a multiple course Redi-Rock wall, each layer of blocks sets back from the blocks below. Looking down on the top of the wall, you can see that the radius for each row of blocks gets smaller as you go higher in the wall. The shortest radius will be on the top course of the wall.

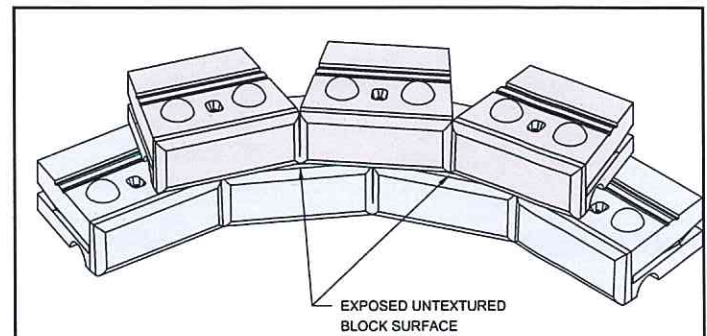


Figure 22

## FREESTANDING WALLS



Figure 44



Figure 45

Redi-Rock freestanding wall blocks have facing texture on two or three sides. They are used in applications where two or three sides of the wall are visible. Freestanding blocks can be installed as “stand alone” walls, such as perimeter walls or fences. (Figure 44) They can also be designed and installed as top courses on a standard Redi-Rock retaining wall. (Figure 45)

Freestanding wall installation is similar to Redi-Rock retaining wall blocks. The main exception is that there is typically no backfill material behind the freestanding walls. Even though there is no backfill acting on the walls, freestanding walls need to be properly engineered. They require adequate stability at the base of the wall and they need to resist any applied forces such as wind loads or forces from railings or fences.

### FREESTANDING WALL INSTALLATION

If you are building a “stand alone” freestanding wall, prepare the subgrade soils and leveling pad as described previously. Place bottom blocks on the leveling pad. A 6” minimum bury on the bottom block is typical. Middle and top blocks are placed directly on top of the bottom blocks with no batter.

If you are building a freestanding wall on the top of a Redi-Rock retaining wall, end the last row of retaining wall blocks with a middle block. The size of the knob on top of the last row of retaining wall blocks will establish the setback for the first row of freestanding blocks. Retaining blocks with a 10” knob will produce a 2 7/8” setback between the retaining block and the first freestanding block. If the retaining blocks have a 7 1/2” knob, the setback between the retaining block and the first freestanding block will be 1 5/8”. (Figure 46) Remember, the 10” diameter knobs are standard on most Redi-Rock retaining wall blocks. Be sure to contact your local Redi-Rock manufacturer to determine availability of specialty blocks and specify which knob size you require for your project.

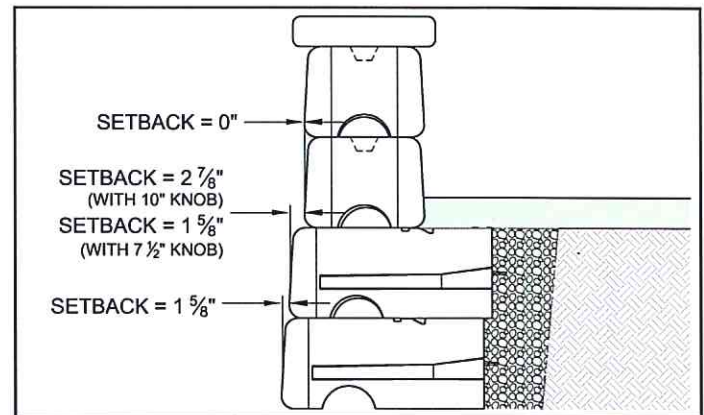


Figure 46

## FREESTANDING WALL NOTES

Start and end freestanding walls with straight blocks. Three sided curved blocks are not available.

Freestanding walls are installed with no batter.

A wall constructed with all freestanding curved blocks will have a radius of 14' 6". A wall constructed with alternating straight and curved freestanding blocks will have a radius of 29' 0". Other radii can be constructed by cutting the ends of the freestanding blocks to fit. Redi-Rock freestanding blocks with the 4" x 12" end insert are designed to be easier to cut in the field. (Figure 47)

Colored foam "Backer Rod" can be used to fill any small gaps which may occur between the blocks when installing walls. (Figure 48) Backer rods diameter can be purchased from concrete supply centers. Call your local Redi-Rock manufacturer for help locating foam backer rods for your project.

## CAP INSTALLATION

Cap blocks are commonly used on top of freestanding walls to provide a "finished" look to the project.

Mark the center of the freestanding blocks to monitor the correct running bond spacing.

Place a minimum of two beads of construction adhesive on top of the freestanding block before setting the cap block. (Figure 49) Use an adhesive that meets the requirements of ASTM D3498 and C557 and HUD/FHA Use of Materials Bulletin #60. An example is Titebond Heavy Duty Construction Adhesive by Franklin International (1-800-347-4583) or PL Premium Construction Adhesive (www.stickwithpl.com). Mortar cement can also be used.

Three sided caps should be used on the end of walls. Two sided caps should be used in the middle of walls. Caps can be cut as needed for proper alignment.

If desired, grout the joints between cap blocks after installation with a non-shrink grout.

**TIP: A Probst Quick Lift may be used for easier installation of cap blocks or freestanding top (flat) blocks. (Figure 50)**



Figure 47



Figure 48



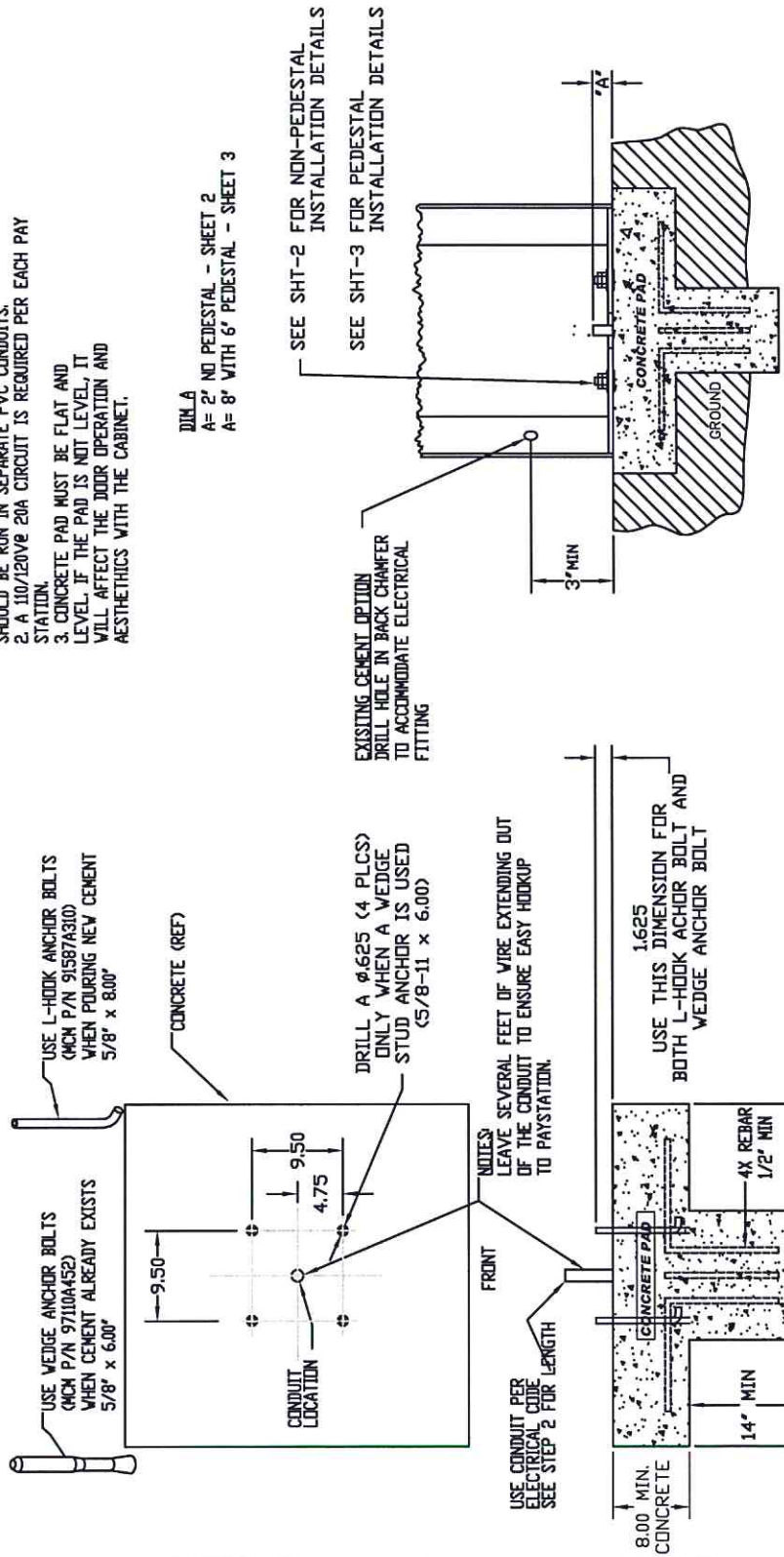
Figure 49



Figure 50



- NOTES:
1. RUN THE POWER AND PHONE LINES IN INDIVIDUAL CONDUIT. IN ADDITION, THE NETWORK LINE RUNNING IN AND THE NETWORK LINE RUNNING OUT SHOULD BE RUN IN SEPARATE PVC CONDUITS.
  2. A 10/120V@ 20A CIRCUIT IS REQUIRED PER EACH PAY STATION.
  3. CONCRETE PAD MUST BE FLAT AND LEVEL. IF THE PAD IS NOT LEVEL, IT WILL AFFECT THE DOOR OPERATION AND AESTHETICS WITH THE CABINET.

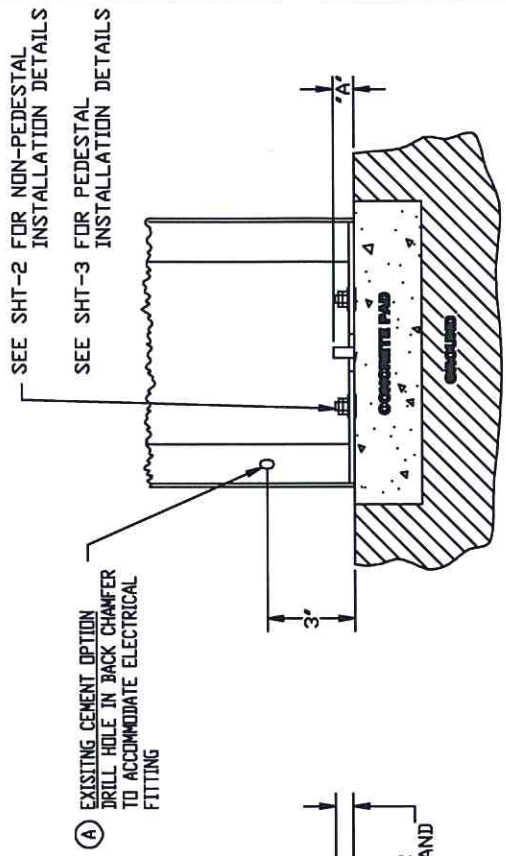
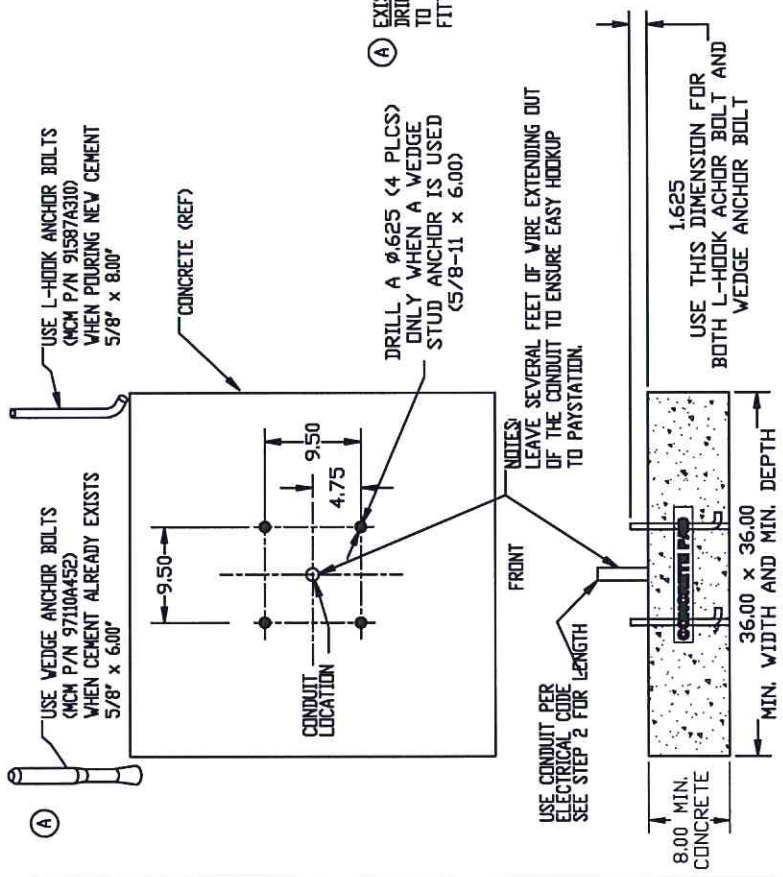


CROSS-SECTION  
**STEP 2**

**CONC. PAD SPECIFICATIONS**

<b>VenTek International</b> Engineering the future of automated parking payment systems 1256 HELIX ROAD, SUITE A, PETALUMA, CA 94954 TEL (707) 773-3373 FAX (707) 773-3381	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS FINISHES: XX ± .030 XXX ± .015 SMOOTH TO DISCREET 1 OF 3 APPROVED BY: - - DATE: - -	APPROVALS DRAWN BY: DLE LMTD 4/11/13 CHECKED BY: - - LMTD - - APPROVED BY: - - DATE: - -	DRAWING NAME: VENSTATION INSTALLATION DRAWING NO: 61-905 REV. DESCRIPTION: REV F - ADD ELECTRICAL REQUIREMENTS ECU# 1168	REVISION F
	CONCRETE (REF) USE WEDGE ANCHOR BOLTS (MCM P/N 9710A452) WHEN CEMENT ALREADY EXISTS 5/8" x 6.00" USE L-HOOK ANCHOR BOLTS (MCM P/N 91587A310) WHEN POURING NEW CEMENT 5/8" x 8.00" DRILL A #625 (4 PLCS) ONLY WHEN A WEDGE STUD ANCHOR IS USED (5/8"-11 x 6.00) CONDUIT LOCATION 9.50 4.75 9.50 14" MIN 36.00 SQUARE MIN. WIDTH 12" SQUARE 4X REBAR 1/2" MIN 1.625 USE THIS DIMENSION FOR BOTH L-HOOK ANCHOR BOLT AND WEDGE ANCHOR BOLT USE CONDUIT PER ELECTRICAL CODE SEE STEP 2 FOR LENGTH NOTES: LEAVE SEVERAL FEET OF WIRE EXTENDING OUT OF THE CONDUIT TO ENSURE EASY HOOKUP TO PAYSTATION. FRONT CONCRETE PAD 8.00 MIN. CONCRETE 3" MIN GROUND CONCRETE PAD DIM. A A= 2' NO PEDESTAL - SHEET 2 A= 8' WITH 6' PEDESTAL - SHEET 3 SEE SHT-2 FOR NON-PEDESTAL INSTALLATION DETAILS SEE SHT-3 FOR PEDESTAL INSTALLATION DETAILS EXISTING CEMENT OPTION DRILL HOLE IN BACK CHAMFER TO ACCOMMODATE ELECTRICAL FITTING			

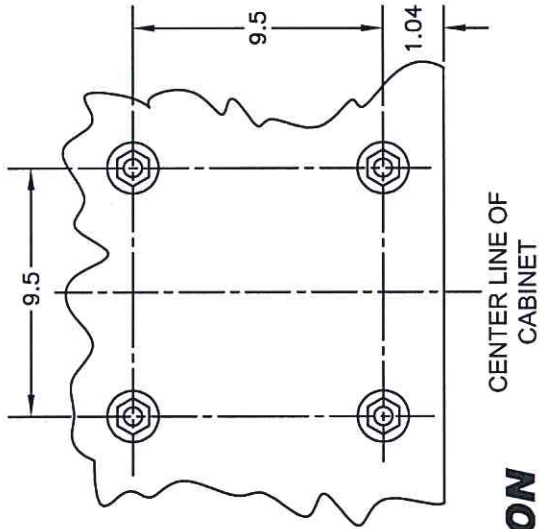
- NOTES:**
- 1 - RUN THE POWER AND PHONE LINES IN INDIVIDUAL CONDUIT.
  - 2 - RUN THE DATA LINES IN SEPARATE CONDUIT.
- DIM. A**
- A= 2' NO PEDESTAL - SHEET 2
  - A= 8' WITH 6' PEDESTAL - SHEET 3



**CONC. PAD SPECIFICATIONS**

**STEP 2**

<p><b>Ventek International</b>          Enhancing the future of automated parking payment systems          424 PARKWAY STREET, SUITE D, REDLANDS, CA 94052          TEL: (707) 775-3373 FAX: (707) 775-3381</p>	<p>IF THESE DIMENSIONS SPECIFIED HEREON ARE IN INCHES, DIMENSIONS AND ANGLES SHALL BE TO THE NEAREST .001" UNLESS OTHERWISE SPECIFIED. THIS DRAWING IS TO BE USED IN CONJUNCTION WITH THE DRAWING FROM WHICH IT IS DERIVED.</p>	<p>APPROVALS</p> <p>DESIGNER: [ ] DATE: 04/20/09</p> <p>CHECKED BY: [ ] DATE: [ ]</p> <p>APPROVED BY: [ ] DATE: [ ]</p>	<p>DRAWING NAME</p> <p>PEDESTAL INSTALLATION VENSTATION</p>	<p>DRAWING NO</p> <p>61-905</p>	<p>REV. DESCRIPTION</p> <p>Rev.C - MOVE SIDE PANEL OPTIONS TO SEPARATE DRAWINGS</p> <p>ECC # 369</p>	<p>REVISION</p> <p>C</p>
	<p>ENCLOSED PEDESTAL INSTALLATION VENSTATION</p>					

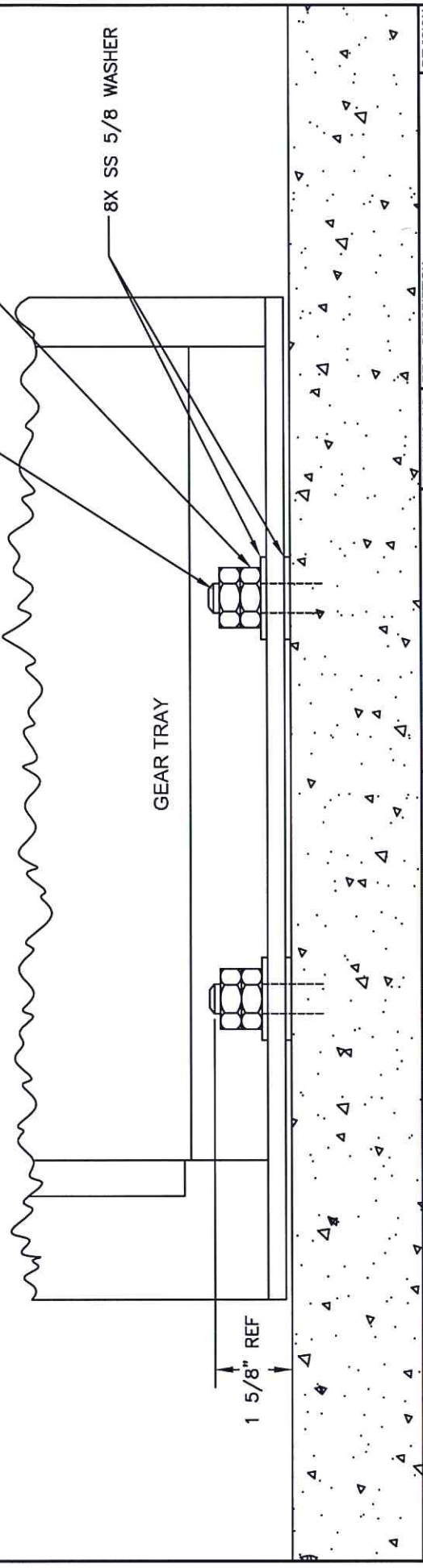


HOLE PATTERN DETAIL  
SCALE 1:4

- NOTES:
1. PUT (4) 5/8 WASHERS ON PAD
  2. CHECK THAT THE WASHERS ARE LEVEL TO EACH OTHER, SIDE TO SIDE AND FRONT TO BACK
  3. ADD WASHERS AS NECESSARY TO MAKE MOUNTING SURFACE LEVEL.
  4. MOUNT CABINET AND FASTEN AS SHOWN.

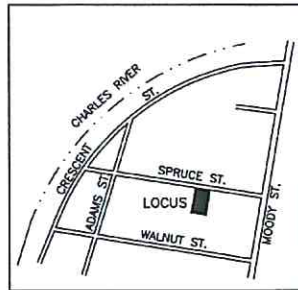
- 4X 5/8-11 L-HOOK OR ANCHOR BOLTS
- 8X 5/8-11 NUT,SS
- 8X SS 5/8 WASHER

# NO-PEDESTAL INSTALLATION

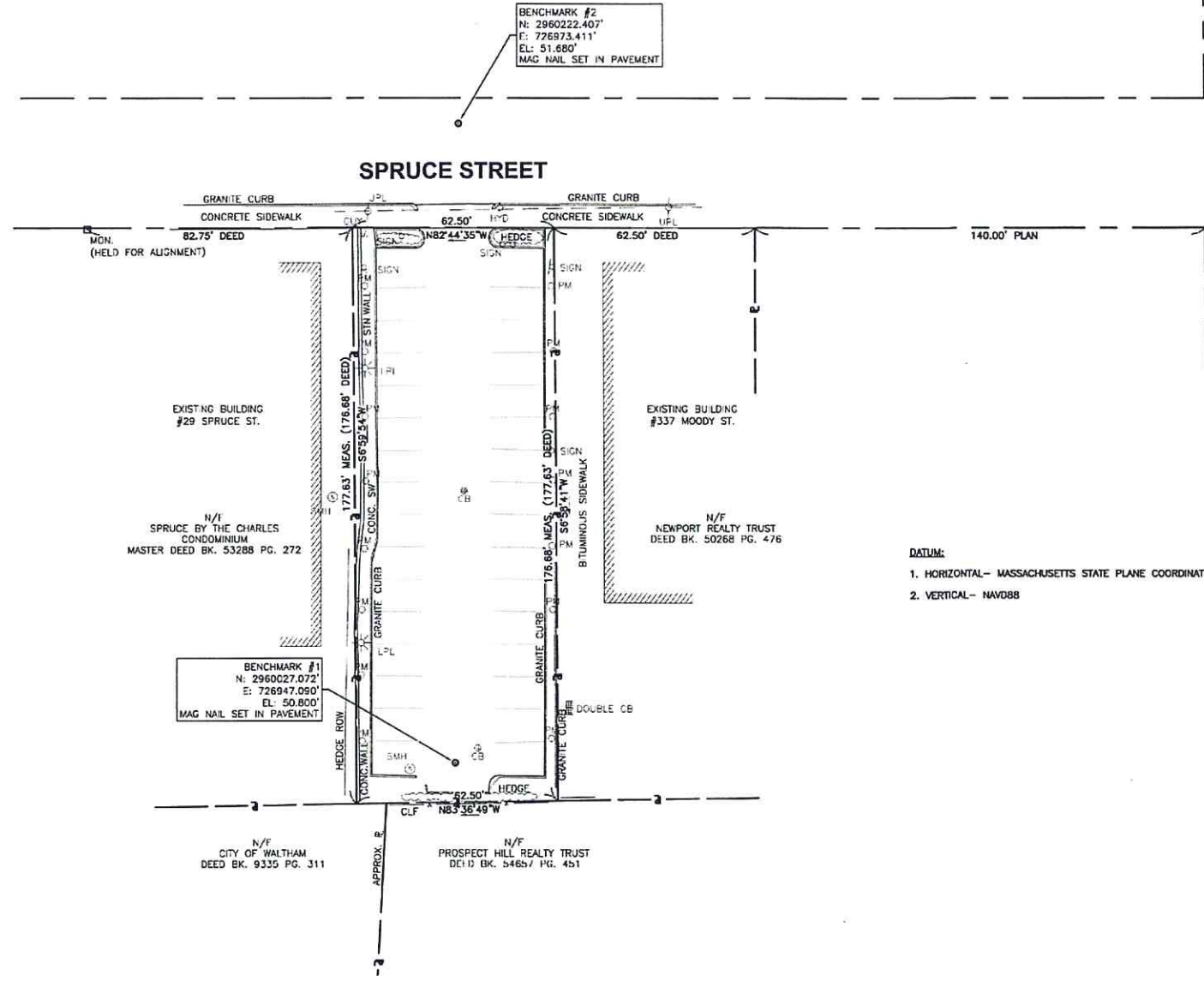


<p><b>Ventek International</b> engineering the future of automated payment systems 1280 HOLM ROAD, SUITE A, PETALUMA, CA 94954 TEL. (707) 775-3373 FAX (707) 775-3381</p>		<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES &amp; TOLERANCES ARE:</p> <table border="1"> <tr> <td>DECIMALS</td> <td>ANGLES</td> </tr> <tr> <td>.XX ± .030</td> <td>± 1°</td> </tr> <tr> <td>.XXX ± .015</td> <td></td> </tr> </table> <p>SCALE: 1 TO 2 SHEET: 2 OF 3</p>	DECIMALS	ANGLES	.XX ± .030	± 1°	.XXX ± .015		<p>APPROVALS</p> <p>DRAWN BY: _____ CHL DATE: 4/11/13</p> <p>CHECKED BY: _____ DATE: _____</p> <p>APPROVED BY: _____ DATE: _____</p>	<p>DRAWING NAME: VENSTATION INSTALLATION</p>	<p>DRAWING NO: 61-905</p>	<p>REV. DESCRIPTION: SEE SHEET 1</p>	<p>REVISION F</p>
DECIMALS	ANGLES												
.XX ± .030	± 1°												
.XXX ± .015													

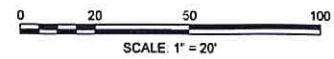
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LOCUS  
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- DATUM:**
1. HORIZONTAL- MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83
  2. VERTICAL- NAVD88



FOR REGISTRY USE

**PLAN REFERENCES:**

1. CITY OF WALTHAM PLAN OF SPRUCE STREET DATED DEC. 1914
2. CITY OF WALTHAM PLAN OF SPRUCE STREET DATED FEB. 1983
3. PLAN OF LAND IN WALTHAM, MA PREPARED BY: M.WATERS C.E. DATED OCT. 16, 1934

**DEED REFERENCES:**

- M.S.D.R.D BOOK: 9335 PAGE: 311  
M.S.D.R.D BOOK: 9525 PAGE: 290  
M.S.D.R.D BOOK: 53288 PAGE: 272  
M.S.D.R.D BOOK: 50268 PAGE: 476

**NOTES:**

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I CERTIFY: THAT THIS ACTUAL SURVEY WAS MADE ON THE GROUND BETWEEN JAN. 31, 2014 AND MARCH 27, 2014.

THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTER OF DEEDS.



PROFESSIONAL LAND SURVEYOR DATE 4/7/14

REV.	COMMENTS REVISIONS	DATE

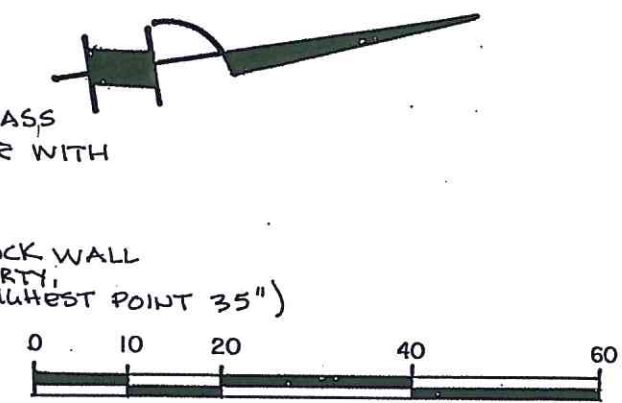
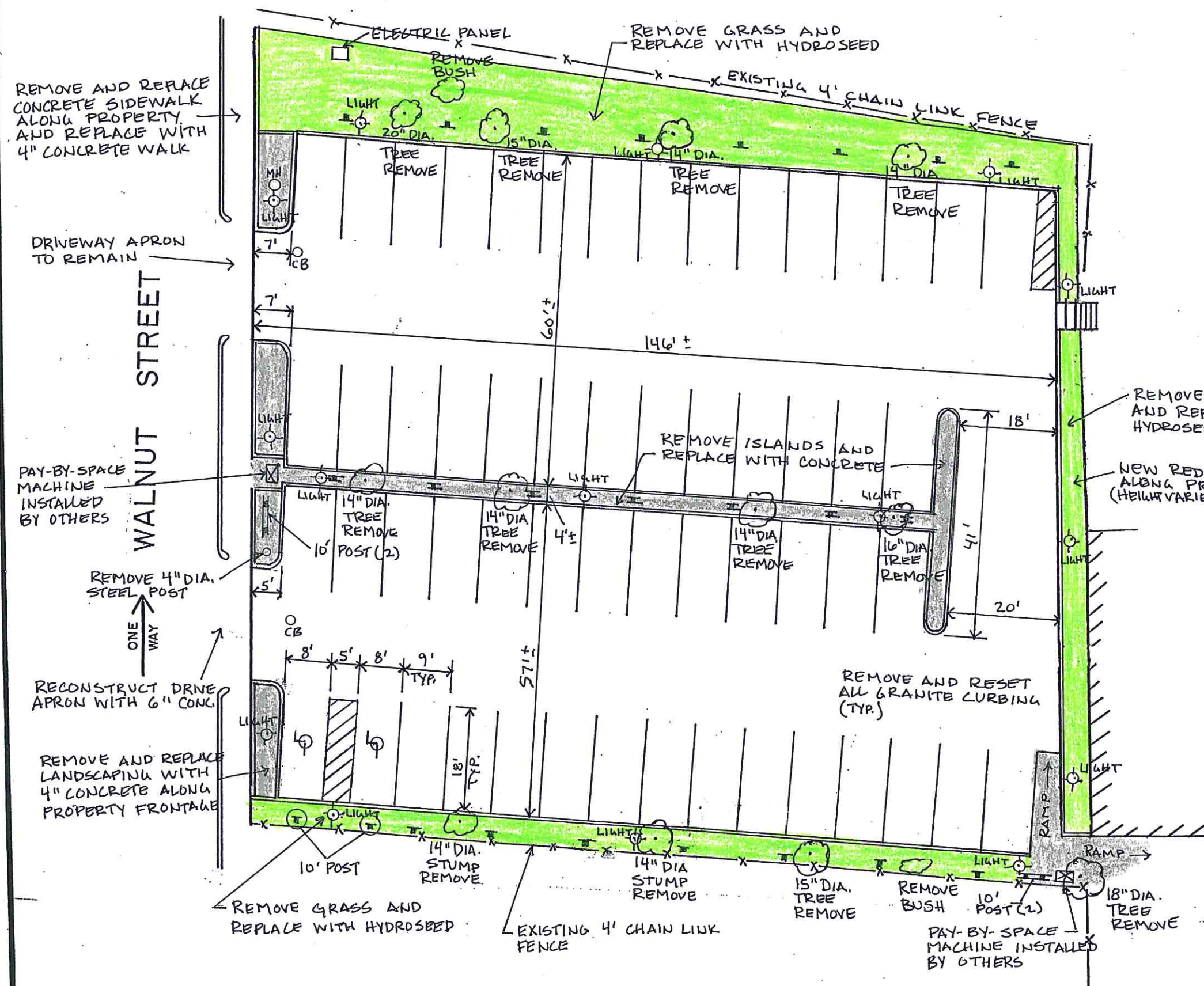
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FILE: SPRUCE STREET SURVEY.DWG  
SCALE: 1"=20'  
DATE: MARCH 31, 2014  
DRAFTED BY: P.J.M.  
CHECKED BY: N.H.B.

PLAN OF LAND  
SHOWING  
A BOUNDARY SURVEY  
AT  
PARCEL R 69-13-14 SPRUCE STREET WALTHAM, MA  
PREPARED FOR  
CITY OF WALTHAM  
119 SCHOOL STREET  
WALTHAM, MA

Bridge & Structural Engineering  
Civil/Site Engineering  
Land Surveying  
Transportation Engineering  
Architectural Design & Building Renovations

**BAYSIDE ENGINEERING**  
600 Unicorn Park Drive Woburn MA 01801  
Phone: 781.932.3201 Fax: 781.932.3413

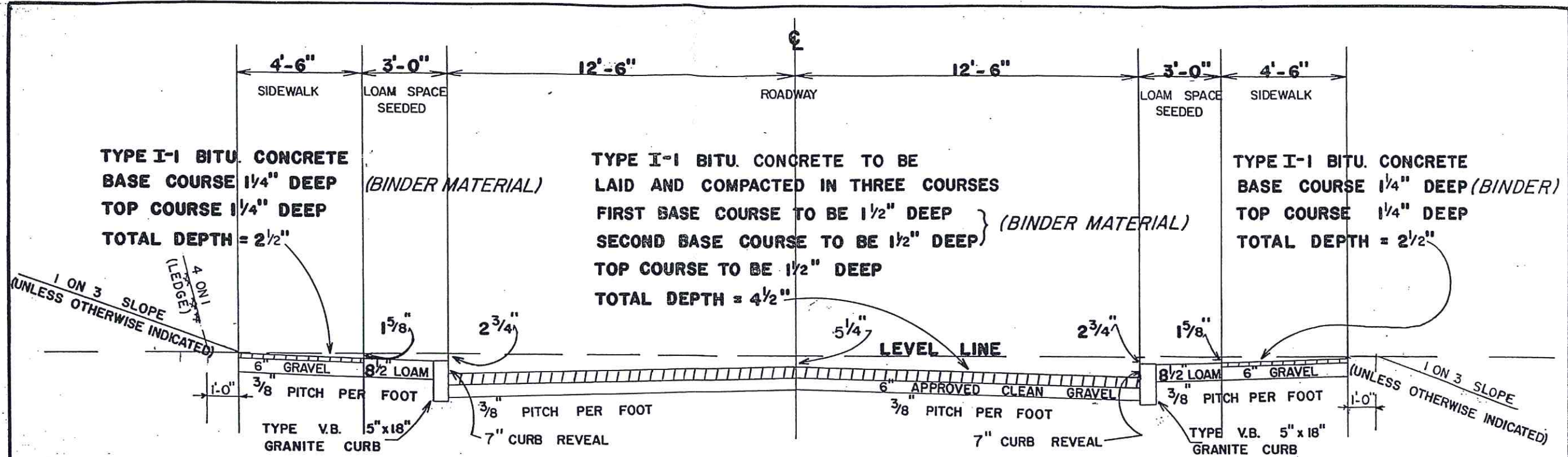
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1 OF 1



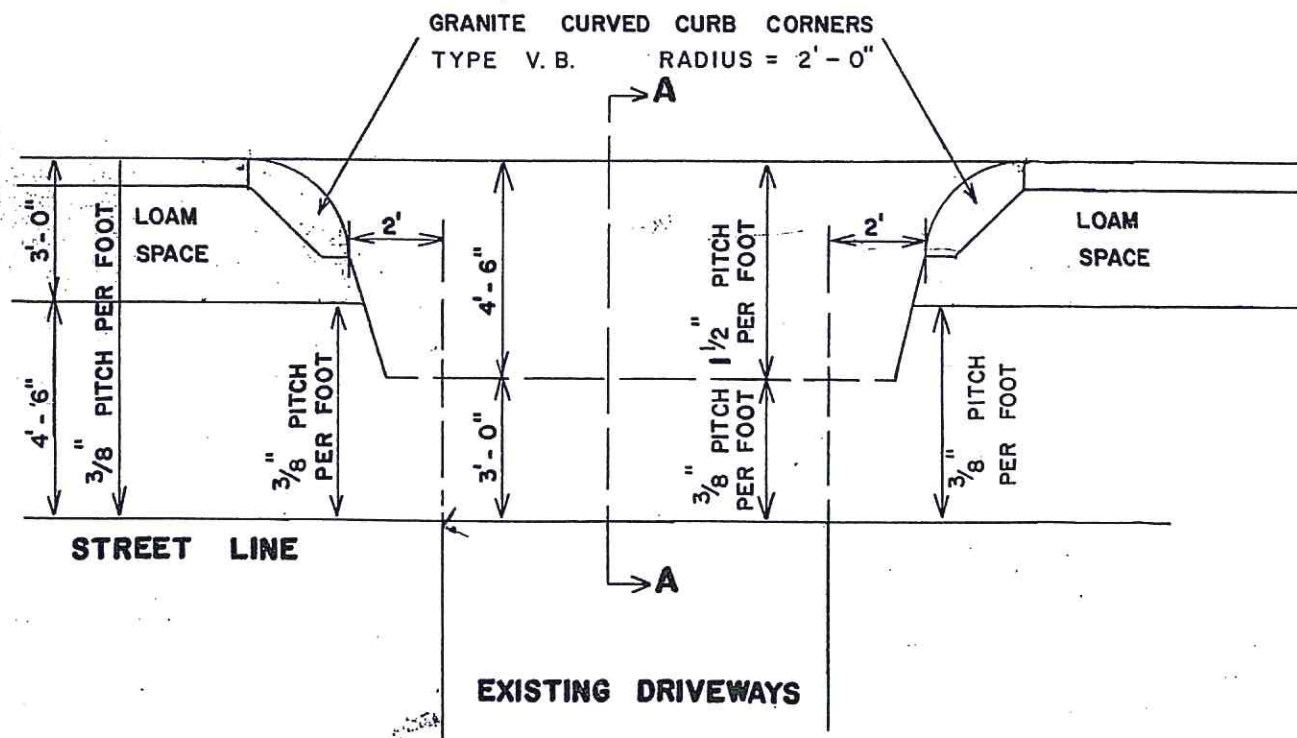
CITY OF WALTHAM  
 WALNUT STREET  
 PARKING LOT

OCTOBER 2014 LMG

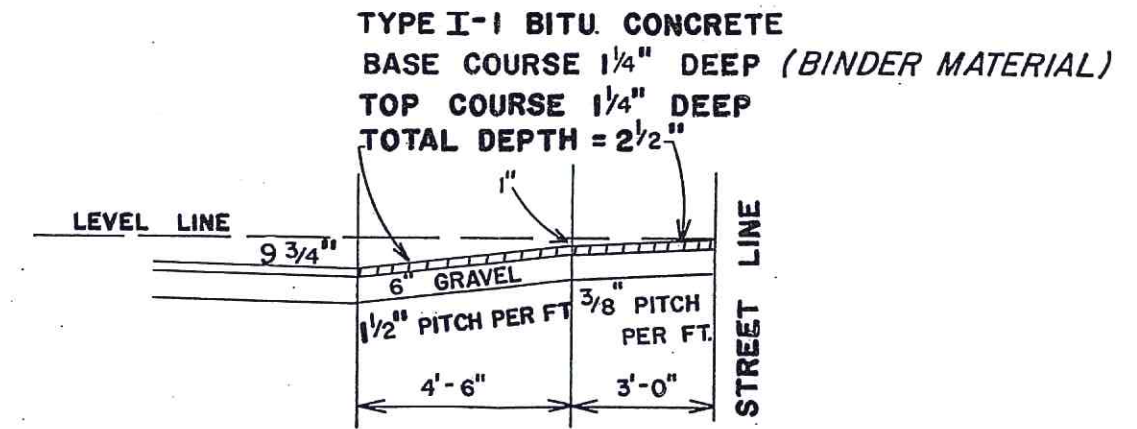
84-52A



CONSTRUCTION METHODS AND MATERIALS TO COMPLY WITH "STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES & WATERWAYS", DEPARTMENT OF PUBLIC WORKS, COMMONWEALTH OF MASSACHUSETTS, CURRENT EDITION.



DETAILS AT DRIVEWAYS



SECTION THRU A - A

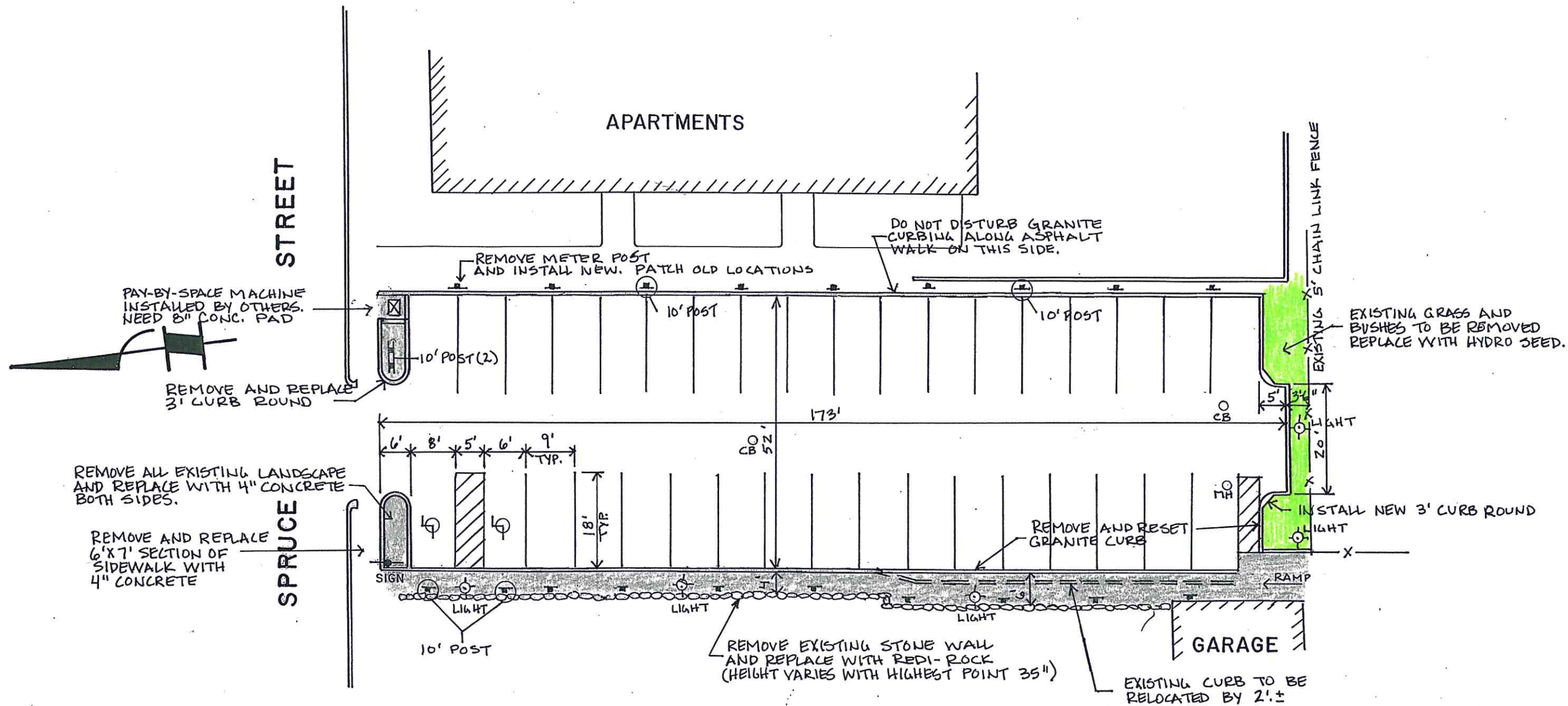
DRIVEWAYS FROM GUTTERS TO STREET LINES WILL BE CONSTRUCTED AS SHOWN ON THIS SECTION, ADJUSTMENTS BEYOND STREET LINES WILL BE TO EXTENT INDICATED ON PLAN & WILL CONFORM TO ORIGINAL MATERIALS.

**TYPICAL LEVEL STREET SECTION FOR 40.00 FT. STREET WITH SIDEWALKS**

FOR USE IN RESIDENTIAL DISTRICTS  
CITY OF WALTHAM, MASS.

SCALE: 1 INCH = 4 FT. HOR. & VERT. SEPT. 1972

*Edward F. Delaney* CITY ENGINEER

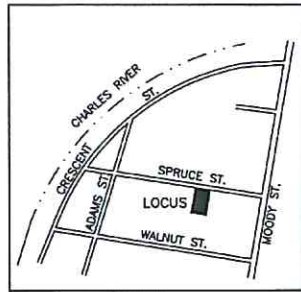


**NOTES:**

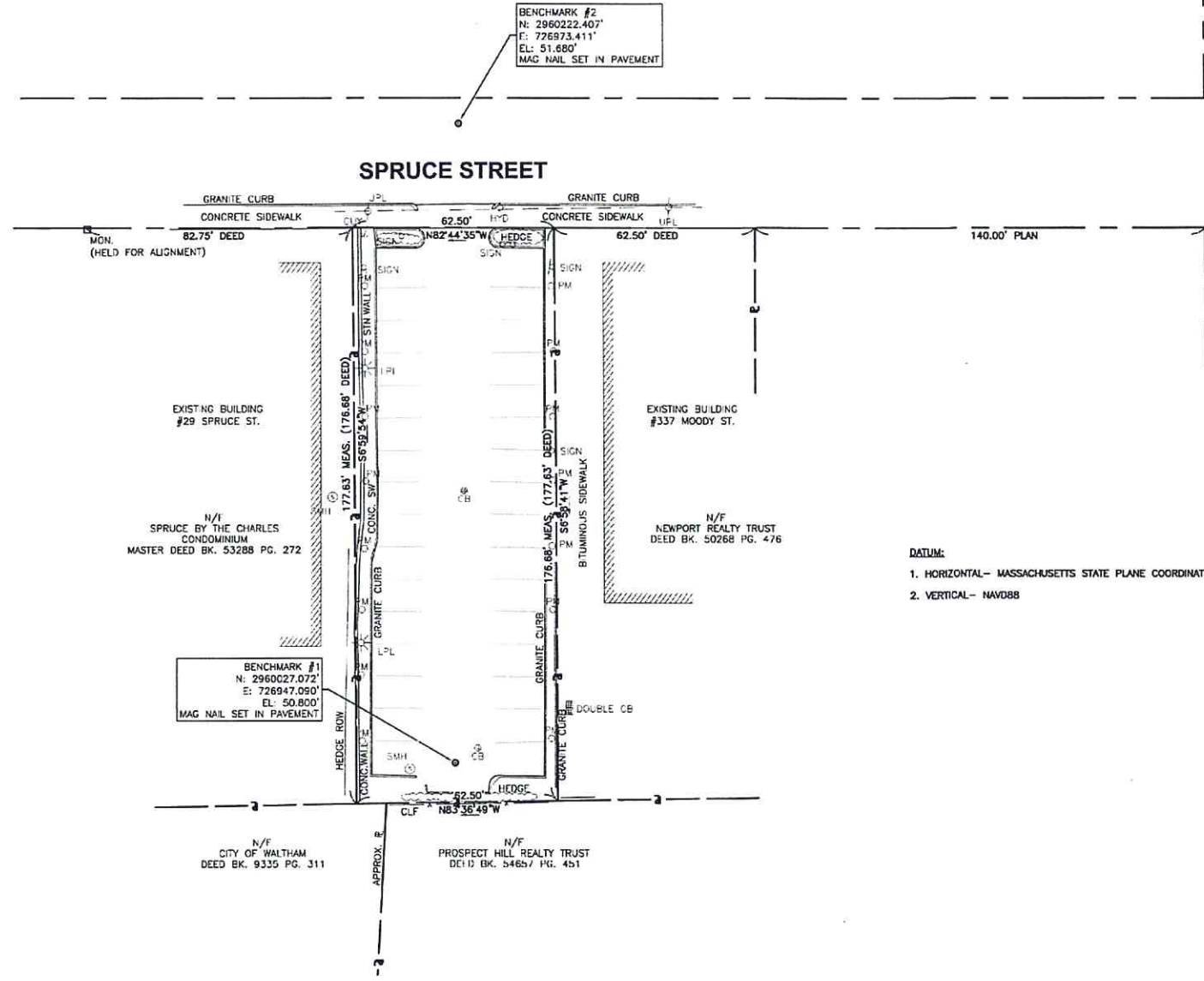
- ALL SIGNS WILL BE FURNISHED BY CITY.
- REMOVE ALL EXISTING LIGHT BASES (4 TOTAL)
- REMOVE EXISTING CONCRETE COBRA LIGHT FIXTURES (2 TOTAL)
- EXISTING U-POST SIGN POST WILL BE REMOVED BY CITY.



CITY OF WALTHAM  
 SPRUCE STREET  
 PARKING LOT  
 OCTOBER 2014  
 LMG



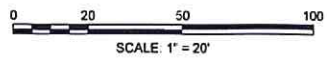
LOCUS  
N.T.S.



BENCHMARK #2  
N: 2960222.407'  
E: 726973.411'  
EL: 51.680'  
MAG NAIL SET IN PAVEMENT

BENCHMARK #1  
N: 2960227.072'  
E: 726947.050'  
EL: 50.800'  
MAG NAIL SET IN PAVEMENT

- DATUM:
1. HORIZONTAL - MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83
  2. VERTICAL - NAVD88



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**S-1**  
1 OF 1