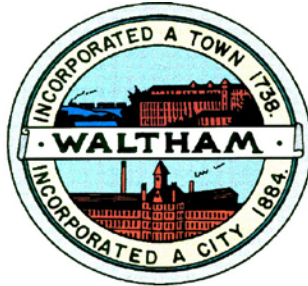


# The City of Waltham



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

**RESURFACING of BITUMINOUS ROADWAYS &  
REPAIRS TO SIDEWALKS, Bright Street and Winter Street, 2020.  
CHAPTER 90 PROJECT**

**The GENERAL BID is due: 10.00 AM FRIDAY FEBRUARY 14, 2020**

**PRE-BID Meeting and Briefing 10.00 AM WEDNESDAY FEBRUARY 5, 2020**

*Meet in the Conference Room of City Hall, 610 Main Street Waltham, MA 02452*

**LAST DAY FOR WRITTEN QUESTIONS: 12 Noon FEBRUARY 6, 2020**

*(Via e-mail ONLY to [Jpedulla@city.waltham.ma.us](mailto:Jpedulla@city.waltham.ma.us))*

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## **DIVISION 00**

**SECTION 00 02 00  
CITY OF WALTHAM  
MASSACHUSETTS**

**NOTICE TO BIDDERS**

**Resurfacing of Bituminous Roadways &  
Repairs to Sidewalks. Chapter 90 Project, Bright St. and Winter St., 2020**

The City of Waltham, Massachusetts invites sealed bids from Contractors for the **Resurfacing of Bituminous Roadways & Repairs to Sidewalks. Chapter 90, 2020.**

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

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

Sealed **BIDS** for this project will be accepted from eligible bidders at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02452 until **10:00 am Friday February 14, 2020** at which place and time they shall be publicly opened, read aloud and recorded for presentation to the Awarding Authority.

A **PRE-BID CONFERENCE AND SITE INSPECTION** will be held for all interested parties in the Conference Room of City Hall, 610 Main Street Waltham, MA 02452 **10:00 Am Wednesday February 5, 2020**. Attendance at this pre-bid conference is strongly recommended but not mandatory for parties submitting a bid. It will be the only opportunity to visit the site prior to the bid opening.

**LAST DAY FOR WRITTEN QUESTIONS is 12 noon February 6, 2020.** Questions are to be sent via e-mail only to [Jpedulla@city.waltham.ma.us](mailto:Jpedulla@city.waltham.ma.us)

Each general bid shall be accompanied by a bid deposit in the form of a bid bond, certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the City of Waltham in the amount of five percent (5%) of the value of the bid

Bids shall be made on the basis of the Minimum Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of Chapter 30, 39M of Massachusetts General Laws, a copy of which is found in the City's Web site at [www.city.waltham.ma.us/bids](http://www.city.waltham.ma.us/bids) .

Bidders' selection procedures and contract award shall be in conformity with the rules of Commonwealth of Massachusetts statute Chapter 30, 39M.

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

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

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

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

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

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

CITY OF WALTHAM

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

## **SECTION 00 10 00 - INSTRUCTION TO BIDDERS**

### **PART 1 - GENERAL**

#### **1.01 SCHEDULE OF DATES**

- A. Advertisement appears in Central Register, Plans and Specifications ready for Bidders at the Offices of the Waltham Purchasing Agent after 8:30 P.M. on November 8, 2017.
- B. **Pre-bid meeting: February 5, 2020 at 10:00 AM. Meet in the Conference Room of City Hall, 610 Main Street Waltham, MA 02452**
- C. **Questions** and requests for interpretations may be submitted in writing via e-mail ONLY to [Jpedulla@city.waltham.ma.us](mailto:Jpedulla@city.waltham.ma.us) up to **12:00 noon February 6, 2020.**
- D. Addenda will be issued with answers to questions and interpretations as determined by the Purchasing Department only via e-mail and posting on the web site.
- E. **General Bids Deadline**: Submit your bid response no later than **10:00 am. Friday February 14, 2018** to Joseph Pedulla, CPO, City of Waltham Purchasing Department 610 Main Street Waltham, MA 02452

#### **1.02 BIDDING PROCEDURE**

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

#### **1.03 WITHDRAWAL OF BIDS**

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

#### 1.04 INTERPRETATION OF CONTRACT DOCUMENTS

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

#### 1.05 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

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

#### 1.06 BID SECURITY

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

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



- C. Certified, Treasurer's or Cashier's check shall be made payable to the City of Waltham, Massachusetts.
- D. The bid security shall secure the execution of the Contract and the furnishing of a Performance and Payment Bond by the successful General Bidder for 100% of the contract value.
- E. Should any General Bidder to whom an award is made fail to enter into a contract therefore within five (5) days, Saturdays, Sundays and Legal Holidays, excluded, after notice of award has been mailed to him or fail within such time to furnish a Performance Bond and also a Labor and Materials or Payment Bond as required, the amount so received from such General Bidder through his Bid Bond, Certified, Treasurer's or Cashier's check as bid deposit shall become the property of the City of Waltham, Massachusetts as liquidated damages; provided that the amount of the bid deposit, which becomes the property of the City of Waltham, Massachusetts, shall not in any event exceed the difference between his bid price and the bid price of the next lowest responsible and eligible bidder; and provided further that, in case of death, disability, bona fide clerical error or mechanical error of a substantial nature, or other unforeseen circumstances affecting the General Bidder, his deposit shall be returned to him.

#### 1.07 BID FORM

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

#### 1.08 SUBMISSION OF BIDS AND BID SECURITIES

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

(Firm Name): \_\_\_\_\_  
Resurfacing of Bituminous Roadways & Repairs to Sidewalks, Chapter 90, 2020

#### 1.09 AWARD OF CONTRACT

- A. The Contract shall be awarded to the lowest responsible and eligible General Bidder on the basis of competitive bids in accordance with the procedure set

forth in the provision of Chapter 30, §39M of the General Laws of the Commonwealth of Massachusetts.

- B. If the bidder selected as the General Contractor fails to perform his agreement to execute a contract in accordance with the terms of his General Bid, and furnish a Performance Bond and also a Labor and Materials or Payment Bond, as stated in his General Bid an award shall be made to the next lowest responsible and eligible bidder.
- C. The words “lowest responsible and eligible bidder” shall be the bidder whose name is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work and who shall certify that he is able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, on the work. Essential information in regard to such qualifications shall be submitted in such form as the Awarding Authority may require.
- D. Action on the award will be taken within sixty (60) days, Saturdays, Sundays and Legal Holidays excluded after the opening of the bids.
- E. The contract for this service may be extended, by mutual agreement, for an additional one-year period given that all prices and contract terms remain unchanged from the original contract.
- F. The contractor acknowledges and agrees that the city may add additional resurfacing streets, other than in the original list, for which the contractor will be paid the same rates as in the original contract. See also paragraph 1.18. -  
ADDITIONAL WORK.

#### 1.10 SECURITY FOR FAITHFUL PERFORMANCE

- A. The successful bidder must deliver to the Awarding Authority simultaneously with his delivery of the executed contract, an executed Performance Bond, and also a Labor and materials or Payment Bond, each issued by a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of One Hundred Percent (100%) of the Contract Price, as surety for the faithful performance of his contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. Said bonds shall provide that, if the General Contractor fails or refuses to complete the Contract, the Surety Company will be obligated to do so.

- B. Premiums are to be paid by the General Contractor, and are to be included in the Contract Price.

1.11 EQUAL OPPORTUNITY

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

1.12 PRE-BID MEETING

- A. A pre-bid conference will be held at the site on **February 5 2020 at 10:00 AM. Meet in the Conference of City Hall, 610 Main street Waltham, MA 02452.** Interested parties are encouraged to attend given that this will be the only time the site is available prior to the submission of bids. Further, prior to the bid opening, potential bidders may not go onto the site any time other than the aforementioned pre-bid conference.

1.13 SITE VISITS

- A. Interested parties are encouraged to visit the project site(s) at their own time. Although a site visit is not mandatory, the city encourages interested parties to become familiar with the location and work environment

1.14 CONTRACT DOCUMENTS

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

1.141 TERMINATION FOR CONVENIENCE

The City of Waltham may, in its sole discretion, terminate all or any portion of this Agreement or the work required hereunder, at any time for its convenience and/or for any reason by giving written notice to the Contractor thirty (30) calendar days prior to the effective date of termination or such other period as is mutually agreed upon in advance by the parties.

If the Contractor is not in default or in breach of any material term or condition of this Agreement, the Contractor shall be paid its reasonable, proper and verifiable costs up to the of termination to the extent previous payments made by the City of Waltham to the Contractor have not already done so. Such payment shall be the Contractor's sole and exclusive remedy for any Termination for Convenience, and upon such payment by the City of Waltham to the Contractor, the City of Waltham shall have no further obligation to the Contractor.

**The City of Waltham shall not be responsible for the Contractor's anticipatory profits or overhead costs attributable to unperformed work.**

1.15 EQUALITY

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

1.16 TAX FREE NUMBER

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

1.17 SCHEDULE

- A. The work of the Contract shall be Substantially **Completed by no later than November 1, 2020**

1.18 ADDITIONAL WORK

The Contractor acknowledges and agrees that any additional work assigned by the Public Work Department beyond the initial assignment will be performed for the same unit prices and under the same terms and conditions of the initial work.

1.19 WEEKLY JOB MEETINGS

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

1.20 PROJECT SUPERINTENDENT

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

1.21 AWARD

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

1.22 PREVAILING WAGE SCHEDULE

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

1.23 CONFLICT OF INTEREST

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

1.24 PROCEED ORDERS

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

1.25 INTENTIONALLY LEFT BLANK

1.26 COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS

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

1.27 CONSTRUCTION BARRICADES (if applicable)

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

3. Provide entrance protection.

#### 1.28 INSURANCE

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

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

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker's Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Chapter 30, 39M of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

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

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

3. Comprehensive All Risk Motor Vehicle Liability Insurance  
  
Minimum bodily injury limits of \$ 500,000 per person, \$ 1,000,000 per accident, and property damage limit of \$ 1,000,000 per accident.
4. All Risk Insurance  
  
Covering all Contractors' equipment with a provision for Waiver of Subrogation against the Owner.
5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of \$ 1,000,000.
6. **City of Waltham shall be a Named Additional Insured with a Waiver of Subrogation on the insurance policy for this project.**

1.29 SITE ACCESS (if required)

- A. The General Contractor shall gain access to the site via routes approved by the Owner.
  1. The General Contractor as part of the bid price will restore all roads, curbs, driveways, walks and grassed or landscaped areas damaged during construction.

1.30 CONSTRUCTION TRAILER

- A. The General Contractor shall locate the construction trailer at locations approved by the Owner.
- B. The General Contractor shall locate all on site stored or staged materials within the enclosed area designated by the Owner.

1.31 INTENTIONALLY LEFT BLANK

1.32 COMPLETE BID FORMS

- A. Please Note: Each bidder must fill in all the blanks on all the bid forms, even if the information is "zero dollars" or "not applicable". Also, please acknowledge all Addenda issued by the Awarding Authority. Where required Original – "Wet" Signatures must be placed as indicated.

2.00 FUNDS APPROPRIATION and LOAN AUTHORIZATION.

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

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

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

Signature of Individual or Corporate Name by: \_\_\_\_\_  
(Signature of Corporate Officer)

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

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

**END OF SECTION**



CITY OF WALTHAM, MASSACHUSETTS  
CONSOLIDATED PUBLIC WORKS DEPARTMENT

SECTION 00 31 00

RESURFACING OF BITUMINOUS ROADWAYS AND REPAIRS TO SIDEWALKS  
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 ANNUAL CONTRACT FOR RESURFACING OF BITUMINOUS ROADWAYS AND REPAIRS TO SIDEWALKS 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.

102.000	1 EA	TREE PLANTING (2-INCH CALIPER PIN OAK)  _____ PER EA	Unit Price	Extended Price
103.000	1 EA	TREE REMOVED (DIAMETER UNDER 24 INCHES)  _____ PER EA	Unit Price	Extended Price
104.000	1 EA	TREE REMOVED (DIAMETER 24 INCHES AND OVER)  _____ PER EA	Unit Price	Extended Price
105.000	2 EA	STUMP REMOVED  _____ PER EA	Unit Price	Extended Price
120.100	1,500 CY	UNCLASSIFIED EXCAVATION  _____ PER CY	Unit Price	Extended Price
127.000	350 SY	CEMENT CONCRETE EXCAVATION  _____ PER SY	Unit Price	Extended Price
129.010	28,500 SY	COLD PLANING  _____ PER SY	Unit Price	Extended Price
151.220	100 CY	GRAVEL BORROW FOR SIDEWALK  _____ PER CY	Unit Price	Extended Price

151.900	100 TN	CRUSHER RUN  _____	Unit Price	Extended Price
		PER TON		
220.000	100 EA	DRAINAGE STRUCTURE ADJUSTED  _____	Unit Price	Extended Price
		EACH		
220.500	100 VF	DRAINAGE STRUCTURE REMODELED  _____	Unit Price	Extended Price
		PER VERTICAL FOOT		
222.010	25 EA	FRAME AND GRATE OR COVER (IN PLACE)  _____	Unit Price	Extended Price
		EACH		
357.060	20 EA	6" SERVICE GATE BOX  _____	Unit Price	Extended Price
		EACH		
358.100	100 EA	SIDEWALK GATE BOX ADJUSTED  _____	Unit Price	Extended Price
		EACH		
358.200	75 EA	ROADWAY GATE BOX ADJUSTED  _____	Unit Price	Extended Price
		EACH		
405.000	2,500 SY	TRENCH REPAIR  _____	Unit Price	Extended Price
		PER SQUARE YARD		

440.000	500 LB	CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL  _____ PER POUND	Unit Price	Extended Price
460.000	3,000 TN	CLASS I BITUMINOUS CONCRETE (TYPE I-1) (ROADWAY)  _____ PER TON	Unit Price	Extended Price
460.100	2,000 TN	CLASS I BITUMINOUS CONCRETE (TYPE I-1) (SIDEWALKS, DRIVES, PERMANENT PATCHING)  _____ PER TON	Unit Price	Extended Price
464.000	2,500 GL	BITUMEN FOR TACK COAT  _____ PER GALLON	Unit Price	Extended Price
470.000	2,300 LF	BITUMINOUS CONCRETE CURB (TYPE 2)  _____ PER LINEAR FOOT	Unit Price	Extended Price
504.000	125 LF	GRANITE CURB TYPE VA-4 (STRAIGHT)  _____ PER LINEAR FOOT	Unit Price	Extended Price
504.100	180 LF	GRANITE CURB TYPE VA-4 (CURVED)  _____ PER LINEAR FOOT	Unit Price	Extended Price
514.000	1 EA	GRANITE CURB INLET - STRAIGHT  _____ EACH	Unit Price	Extended Price

515.000	1 EA	GRANITE CURB INLET - CURVED  _____ EACH	Unit Price	Extended Price
516.000	2 EA	GRANITE CURB CORNER TYPE A (2' RADIUS)  _____ EACH	Unit Price	Extended Price
517.000	2 EA	GRANITE CURB CORNER TYPE B (3' RADIUS)  _____ EACH	Unit Price	Extended Price
580.000	1,875 LF	CURB REMOVE AND RESET  _____ PER LINEAR FOOT	Unit Price	Extended Price
701.050	200 SY	4" CEMENT CONCRETE SIDEWALK FIBERMESH REINFORCED  _____ PER SQUARE YARD	Unit Price	Extended Price
701.150	200 SY	6" CEMENT CONCRETE SIDEWALK FIBERMESH REINFORCED  _____ PER SQUARE YARD	Unit Price	Extended Price
702.000	18 EA	DETECTABLE TILE SURFACE FOR HANDICAP RAMPS  _____ EACH	Unit Price	Extended Price
711.000	2 EA	STONE BOUND REMOVED AND RESET  _____ EACH	Unit Price	Extended Price

711.100	14 EA	STONE BOUND FRAME AND COVER  _____	Unit Price	Extended Price
		EACH		
751.000	300 CY	LOAM BORROW  _____	Unit Price	Extended Price
		PER CUBIC YARD		
765.650	500 SY	HYDRO SEEDING  _____	Unit Price	Extended Price
		PER SQUARE YARD		
819.837	50 LF	LOOP DETECTORS WITH LEAD-IN-WIRES  _____	Unit Price	Extended Price
		PER LINEAR FOOT		
850.221	700 SF	SAFETY SIGNING FOR CONSTRUCTION OPERATIONS  _____	Unit Price	Extended Price
		PER SQUARE FOOT		
854.014	1,000 LF	TEMPORARY PAVEMENT MARKINGS – 4" (PAINTED)  _____	Unit Price	Extended Price
		PER LINEAR FOOT		
864.040	1,000 SF	PAVEMENT ARROWS AND LEGENDS REFLECTORIZED WHITE THERMOPLASTIC  _____	Unit Price	Extended Price
		PER SQUARE FOOT		
864.050	14 EA	SHARROW (PAINTED)  _____	Unit Price	Extended Price
		EACH		

865.100	5,000 SF	CROSSWALKS AND STOP LINES REFLECTORIZED WHITE THERMOPLASTIC  PER SQUARE FOOT	Unit Price	Extended Price
866.040	12,200 LF	4" REFLECTORIZED THERMOPLASTIC LINE (WHITE OR YELLOW)  PER LINEAR FOOT	Unit Price	Extended Price
870.000	100 DY	PORTABLE MESSAGE BOARD  PER DAY	Unit Price	Extended Price
999.001	35,000	TRAFFIC POLICE  DOLLAR FOR DOLLAR REIMBURSEMENT	\$1.00	\$35,000
	<b>Total Bid price in words:</b>			
<b>Total Bid price written in figures:</b>			\$	

It is understood that the City of Waltham makes no provision for the allowance of price escalation for any reason. It is the responsibility of the contractor to forecast such yearly increases, if any, and make allowances in the prices offered above.

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

**END OF SECTION 00 31 00**



## **SECTION 00 32 00**

### **CONTRACT FOR MILLING AND PAVING BRIGHT STREET AND WINTER STREET**

#### **SCOPE OF WORK, SUMMARY:**

The work consists of milling and paving the entire length of Bright Street and two sections of Winter Street, section 1: Lincoln Street to the Dead End, section 2: Totten Pond Road to Wyman Street. In total there is approximately 7,500 linear feet of roadway to be repaired. The widths of these roadways vary between 20 feet and 40 feet. The work shall include resetting manholes, catchbasins, and water and gas gate boxes. Sidewalks to be repaired or replaced will be as specified by the OWNER. The OWNER will mark out the limits of the sidewalk work and review with the CONTRACTOR. The CONTRACTOR will reset, replace, repair, or install granite curbing or asphalt berm at the direction of the OWNER. All work shall be done in compliance with the Americans with Disabilities Act. ADA compliant curb ramps shall be installed where directed by the OWNER. The City reserves the right to add additional streets to the contract as the budget allows.

**SECTION 00331**

PREVAILING WAGE SCHEDULE

Please visit the City Web Site at [www.city.waltham.ma.us/bids](http://www.city.waltham.ma.us/bids) for a copy of the schedules

**Section 00 50 00**

**AGREEMENT**

**CITY OF WALTHAM**

**ARTICLE 1.** This agreement, made this \_\_\_\_\_ day of \_\_\_\_\_, 2020 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

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hereinafter called the CONTRACTOR.

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

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

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

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

**CITY OF WALTHAM, MASSACHUSETTS**

**FOR THE COMPANY**

**FOR THE CITY**

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

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

\_\_\_\_\_  
Company

\_\_\_\_\_  
Address

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

\_\_\_\_\_  
Michael Chiasson, Director of Public Works  
Date: \_\_\_\_\_

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

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

I CERTIFY THAT SUFFICIENT FUNDS  
ARE AVAILABLE FOR THIS CONTRACT

**SECTION 00 51 00**

**PERFORMANCE BOND**

**CITY OF WALTHAM**

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 for the above burden (the Contractor) its

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

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

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

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

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

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

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

WITNESSES:

(CONTRACTOR) (SEAL)

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

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

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

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

POWER OF ATTORNEY

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

**SECTION 00 50 20**

**PAYMENT BOND**

**CITY OF WALTHAM**

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 for the above burden (the Contractor) its

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

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

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

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who

may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

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

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

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

WITNESSES:

(CONTRACTOR)

(SEAL)

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

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

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

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

POWER OF ATTORNEY

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



## **DIVISION 01**

## CLEARING AND GRUBBING

**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
104.000	Tree removed (diameter Over 24 Inches)	Each

## DISPOSAL OF STUMPS AND BRUSH

### 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 Disease Wood:** Dutch Elm disease 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 trees 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

## COLD PLANING

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

**METHOD:** Catch basins shall be protected during the cold planing process by inserting silt fabric between each frame and grate. The fabric shall be removed immediately after all cuttings have been removed. Any cuttings that fall into the catch basin shall be removed by the CONTRACTOR.

The bituminous concrete surface shall be planed and profiled by a power operated planing machine or a grinder capable of removing, in one pass, a layer of bituminous concrete nine feet. The equipment shall be self-propelled with sufficient power traction and stability to maintain accurate depth of cut and slope and shall be equipped with all necessary safety devices such as flashing lights and back-up signals so as to operate in traffic with complete safety. The equipment will be capable of accurately and automatically establishing profile grades along each edge of the machine by referencing from the existing pavement or from an independent grade control and shall have an automatic system for controlling cross slope at a given rate.

All planing machinery shall be equipped with dust control devices to prevent any dust produced in the cutting operation from escaping into the air. Dust control equipment must comply with EPA air quality standards.

The CONTRACTOR shall also have the necessary auxiliary grinding or milling machinery to perform the required cutting and trim cutting around castings. Pneumatic rubber-tire mounted equipment shall be used only for trimming and edging operations.

The cold plane cuttings from the operation shall be discharged directly from the planer into the CONTRACTOR'S trucks and legally disposed of off the site by the CONTRACTOR in a manner acceptable to the OWNER. Unless otherwise specified by the OWNER, the materials shall become the property of the CONTRACTOR. Loose materials left on the roadway surface as a result of the cold planing operations shall be removed and disposed of by the CONTRACTOR in the same manner as the planed material.

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

**MEASUREMENT:** Measurement for cold planing shall be for the number of square yards of material removed and disposed of, regardless of depth, as accepted and measured by the OWNER.



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

	<u>Payment Item</u>	
129.010	Cold Planing	Square 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 AASHTO 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 ¾ 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
220.500	Drainage Structure Remodeled	Vertical Foot
222.010	Frame and Grate or Cover	Each

**DRAINAGE STRUCTURE REMODELED**

**GENERAL:** This work shall consist of remodeling existing drainage structures, as required, to conform to newly proposed line and/or grade changes. The work shall be in accordance with these specifications or as required by the OWNER. This item shall not apply to new castings for new structures

When the line and/or grade of an existing drainage structure require a change of more than one foot vertically and/or horizontally, the structure shall be remodeled unless otherwise specified by the OWNER.

**METHOD:** Closing blocks and/or bricks shall be removed to expose the barrel portion of the structure. The barrel portion shall then be altered according to the new line and/or grade. Closing blocks and/or bricks shall then be reset to the structure. All masonry work shall be completed to the satisfaction of the OWNER. The CONTRACTOR shall be held responsible for the protection of the castings and the materials during construction operations. Any materials or castings damaged by the CONTRACTOR shall be replaced at his own expense and at no cost to the City.

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.

**MEASUREMENT:** Measurement for drainage structures remodeled shall be made for the number of vertical feet the structure has been altered. Limits of measurement shall be from the top of the undisturbed row of blocks or barrel portion up to one foot below proposed finished rim grade of the casting. Final adjustment of the casting to finished grade shall be done under ITEM 220.000 or item 222.010 and shall not be considered for measurement or payment under this item. Measurement shall be made in the field by the OWNER.

**PAYMENT:** Payment for drainage structures remodeled shall be made as determined above at the contract unit price for ITEM 220.500 as set forth in the Bid. Said price and payment shall be full compensation for all materials required, all tools, labor, equipment, excavation, backfill & backfilling operations and all else incidental to complete the work within this item. All work is subject to final approval by the OWNER.

**Payment Items**

220.500	Drainage Structure Remodeled	Vertical Foot
220.000	Drainage Structure Adjusted	Each
222.010	Frame and Grate or Cover	Each

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

**GENERAL:** This work shall consist of furnishing, setting and adjusting to final grade any new castings as required.

When existing castings, in the opinion of the OWNER, are found to be defective through no fault of the CONTRACTOR, they shall be removed and disposed of by the CONTRACTOR. A new complete casting shall then be furnished, installed and adjusted to final grade by the CONTRACTOR as required by the OWNER.

Any casting damaged by the CONTRACTOR through his own negligence shall be replaced by him at no additional cost to the City.

**MATERIALS:** For catch basins, the frames shall conform to East Jordan Iron Works (EJIW) type 5546Z FLG3 (3 flange when curbing is present, 4 flange if there is no curbing) or the equivalent. Grates shall conform to EJIW type 5520M5 for standard grates.

For manholes, the frames shall conform to EJIW type 1246 or the equivalent. Covers shall conform to EJIW type 1248A or the equivalent. When ordering the covers, specify whether the top is to be lettered as "SEWER" or "DRAIN".

**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.

**MEASUREMENT AND PAYMENT:** Measurement for frames and grates or covers shall be made for the number of units furnished, placed, adjusted to final grade and accepted as determined from actual count by the OWNER. Payment shall be made based on the number of completed units as determined above at the contract unit price for ITEMS 222.010 & 222.030 as set forth in the Bid. Said price and payment shall be full compensation for furnishing, setting and adjusting all castings, for materials including mortar, bituminous, red clay bricks, gravel, and for all tools, labor, equipment and all else incidental to the work within this item. There shall be no payment under this item for existing castings or for new or proposed castings that are being paid for as part of some other item within this contract.

**Payment Items**

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

## GATE BOXES

**GENERAL:** This work shall consist of furnishing and installing gate boxes as shown on the contract drawings or as required by the OWNER.

Gate boxes shall be two section, cast iron, heavy pattern, adjustable type with cast iron cover. The upper section shall have a bottom flange of sufficient bearing area to prevent settling. The bottom section shall enclose the valve stuffing box and operating nut. Boxes shall be of lengths adapted to five foot pipe cover or more and have a minimum of six inch overlap in the most extended position. Covers shall have the word "WATER" cast in the top.

The box shall be installed vertically and centered over the gate so that the gate wrench may be easily attached onto the gate. After installation, the box shall be cleaned out of all residue. Also included with this item shall be the final adjustment to proposed grade of the new gate box.

**MEASUREMENT:** Measurement for gate boxes shall be for the number of units furnished, installed and accepted as measured by the OWNER.

**PAYMENT:** Payment for gate boxes shall be made for the number of units furnished, installed and accepted as determined above at the contract unit prices for ITEMS 357.040, 357.041, 357.060 and 357.061 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and installing gate boxes and all related work including excavation, pumping, backfill, cement concrete collars, cleaning out the gate box, all tools, labor, equipment, materials and all else incidental to complete the work within this item. There shall be no separate payment for adjustment of new gate boxes and sleeves. That work shall be considered as incidental to the work within this item.

### Payment Items

357.040	4" Service Gate Box	Each
357.041	4" Service Gate Box (Upper Sleeve Only)	Each
357.060	6" Service Gate Box	Each
357.061	6" Service Gate Box (Upper Sleeve Only)	Each



**ADJUSTMENT OF GATE BOXES**

**GENERAL:** This work shall consist of raising the OWNER’S existing water gate and water service gate boxes to newly proposed grades. Prior to adjustment of the gate boxes, the vertical alignment of the box over the center of the gate shall be checked. If needed, the gate box shall be re-aligned over the top of the gate before it is adjusted. Gravel base around the gate boxes shall be thoroughly compacted. For gate boxes in the traveled roadway, the excavated area shall be refilled with gravel, compacted, and set in a cement concrete collar as shown on the detail section of the contract drawings. The final elevations of the structures shall be determined in the field by the OWNER at the time of construction. All work shall be done under the direction of the OWNER. After the boxes are adjusted, they shall be air blown to remove all debris from the inside.

If, during the course of the work, a defective gate box is encountered, the CONTRACTOR shall remove it as required by the OWNER. A new gate box and/or sleeve shall be furnished and installed by the CONTRACTOR. This shall not include any gate boxes and/or sleeves damaged by the CONTRACTOR. Any damage as a result of the CONTRACTOR'S negligence shall be repaired or replaced by him at no cost to the City. Furnishing, installation and adjustment to final grade of any new gate boxes and/or sleeves shall be included as part of ITEMS 357 and shall not be considered as part of ITEMS 358.100 or 358.200.

**MEASUREMENT:** Measurement for gate boxes adjusted shall be for the number of units completed and accepted as determined from actual count by the OWNER.

**PAYMENT:** Payment for gate boxes adjusted shall be made based on the number of completed units as determined above at the contract unit prices for ITEMS 358.100 & 358.200 as set forth in the Bid. Said price and payment shall be full compensation for all work in adjusting gate boxes and/or sleeves including all tools, labor, equipment, cement concrete collars, gravel, compaction, and all else incidental to satisfactorily complete the work within this item. Not included for payment within this item shall be the furnishing, installation, and final adjustment to grade of any new gate boxes and/or sleeves that are required. They shall be measured and paid for under ITEMS 357.

**Payment Items**

358.100	Adjustment of Gate Boxes (Sidewalk)	Each
358.200	Adjustment of Gate Boxes (Roadway)	Each

**TRENCH REPAIR**

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

**MATERIALS:** 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.

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

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

**Payment Item**

405.000

Trench Repair

Square Yard

**CALCIUM CHLORIDE FOR DUST CONTROL**

**GENERAL:** This work shall consist of furnishing and applying approved dust control material to the surface of the sub grade or elsewhere as required by the OWNER.

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

**APPLICATION:** Calcium Chloride shall be uniformly applied at the rate of three-quarters pounds per square yard or as required by the OWNER.

**MEASUREMENT:** Calcium Chloride will be measured by the pound and the quantity to be paid for shall be the actual weight of the material furnished and applied in place.

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

	<b><u>Payment Item</u></b>	
440.000	Calcium Chloride	Pounds

## **CLASS I BITUMINOUS CONCRETE (ASPHALT)**

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

## BITUMEN FOR TACK COAT

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

**MATERIALS AND METHODS:** Bituminous tack material shall conform to the requirements of Section M3.03.0 of the current Edition of the "Standard Specifications for Highways and Bridges," Commonwealth of Massachusetts.

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

The application rate for the bitumen shall be 15 square yards per gallon.

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

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

### Payment Item

464.000	Bitumen for Tack Coat	Gallons
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**BITUMINOUS CONCRETE CURB**

**GENERAL:** This work shall consist of furnishing and placing bituminous concrete curb in accordance with these specifications or as required by the OWNER.

**MATERIALS:** Bituminous concrete curb, Class I, Type 2, shall conform to Commonwealth of Massachusetts SD106.2.0.

**METHODS:** On newly constructed roadways, the bituminous concrete curb shall be placed on a bituminous concrete roadway binder course. On existing roadways, the bituminous concrete curb shall be placed on a bituminous concrete pad of top course mix one foot wide by three inches deep at the gutter line in the existing roadway. The bituminous concrete curb shall be placed and compacted by machine. If, at any time before the acceptance of the work, any soft or imperfect spots develop in the exposed surface of the curb, such material placed shall be removed and replaced with new material and compacted, at no additional cost to the OWNER.

**PAYMENT:** Payment shall be made for the number of linear feet of bituminous curb placed and accepted by the OWNER as determined above at the Contract unit price for ITEM 470.000 as set forth in the Bid. Said price and payment shall be full compensation for all materials, including bituminous concrete curb mix, all labor, tools, equipment, and related work and all else incidental thereto with the exception of the pad for the curb. The bituminous concrete binder course or the bituminous concrete shall be measured and paid for as part of ITEM 460.000 (binder course) or ITEM 460.100 (bituminous pad), whichever item applies.

**Payment Item**

470.000	Bituminous Concrete Curb (Class I - Type 2)	Linear Feet
460.000	Class I Bituminous Concrete Type I-1 (Roadway)	Tons
460.100	Class I Bituminous Concrete Type I-1 (Sidewalks, Drives, Permanent Patching & Adjustment Areas)	Tons

## 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
504.100	Granite Curb Type VA4 Curved	Linear Foot
504.110	Granite Curb Type VA4 Curved (Less than 10' radius)	Linear Foot
506.000	Granite Curb Type VB (5"x18")	Linear Foot
506.100	Granite Curb Type VB (5"x18") Curved	Linear Feet
514.000	Granite Inlet Stone Straight	Each
516.000	Granite Curb Corner-Type A (2'-0"radius)	Each
517.000	Granite Curb Corner-Type B (3'-0"radius)	Each
121.000	Class A Rock Excavation	Cubic Yard
151.900	Crusher Run	Tons
515.000	Granite Inlet Stone Curved	Linear Feet

**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		

## CEMENT CONCRETE SIDEWALKS

**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, wheelchair ramps 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.

**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
702.000	Detectable Tile Surface for Handicap Ramps	Each

### DETECTABLE TILE SURFACE FOR HANDICAP RAMPS

**GENERAL:** The work under this item shall consist of furnishing and installing, by embedding in wet cement concrete, a factory manufactured Composite Detectable Tile Warning Surface that is ADA guideline compliant for the purpose of indicating the presence of a handicap ramp and/or curb cut location. These surfaces shall be accessed by the general public and the physically challenged alike, therefore the installation of these surfaces will require that the Contractor exercise exceptional care in the placement and the finishing process' associated with these tiles.

**MATERIALS:** The Surface shall be equal \* to PART NO. 2460IDPAV2:

\* A twenty four inch by sixty inch (24"x 60") Cast-In-Place Truncated Dome (Composite Tactile) Detectable Warning System as manufactured by;

ADA Solutions, Inc.  
P.O. Box 3  
North Billerica MA 01862  
1-800-372-0519  
[www.adatile.com](http://www.adatile.com)

\*An approved equal shall mean a factory-fabricated system which either meets or exceeds the physical characteristics of the representative surface which is noted above. To that end the contractor must seek approval for an alternate surface by submitting, to the City of Waltham, a catalog cut of the system which he proposes to use. This submittal, and/or actual samples of the material, shall clearly describe the physical characteristics of the proposed alternative unit such that the City of Waltham can readily evaluate the proposed system.

"Equality" - An item equal to that named or described in the specifications of the contract may be furnished by the Vendor and the naming of any commercial name, trademark or other identification shall not be construed to exclude any item or manufacturer not mentioned by name or as limiting competition but shall establish a standard of equality only. An item shall be considered equal to the item so named or described if (1) it is at least equal in quality, durability, appearance, strength and design; (2) it will perform at least equally the function imposed by the general design for the work being contracted for or the material being purchased; and (3) it conforms substantially, even with deviations, to the detailed requirements for the item in the specifications. The name and identification of all materials other than the one specifically named shall be submitted to the City in writing for approval, use, or fabrication of such items. Subject to the provisions of M.G.L., Ch. 30, Sec. 39J, approval shall be at the sole discretion of the City, shall be in writing to be effective, and the decision of the City shall be final. The City may require tests of all materials so submitted to establish quality standards at the Vendor's expense. All directions, specifications and recommendations by manufacturers for installation, handling, storing, adjustment and operation of their equipment shall be complied with; responsibility for proper performance shall continue to rest with the Vendor.

The Detectable Warning Surface shall be of the "CAST IN PLACE REPLACEABLE TACTILE WARNING SURFACE TILES" type or approved equal.

**The color of the panels shall be gray unless another color was previously used in the area and is approved by the OWNER.**

Manufacturer's warranties are to be assigned and delivered to the City of Waltham. The Contractor shall install each Detectable Tile to meet the exact gradient tolerances prescribed in the current ADA guidelines.

Typically each Detectable Tile shall be installed so that the front (street side) edge is set back twelve (12") inches from the face of the curb (so that six (6") inches of cement concrete remain between the back of the curb and the edge of the tile).

Cracked, chipped or deficiently domed tiles will not be accepted.

The Contractor must plan his work so that the outlying cement concrete panels transition to the edge of the tile in a smooth and uniform manner.

Any cement concrete placed adjacent to the tiles shall be brought flush with the surface edge of the tile and shall be finished with an edge trowel.

**MEASUREMENT:** Under this item the Contractor shall be paid per each of Detectable Tiles complete-in-place.

**PAYMENT:** Under this item the Contractor will be paid the contract unit price per each of Detectable Tiles, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item.

**Payment Items**

702.000	Detectable Tile Surface for Handicap Ramps	Each
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**STONE BOUND REMOVED AND RESET**

**GENERAL:** This work shall consist of resetting existing stone bounds to new lines and grades as required by the OWNER.

**MATERIALS:** Cement concrete for stone bounds shall be 3000 psi with ¾ inch stone.

**METHODS:** All excavation shall be done by hand. Prior to excavation at least three accurate ties shall be made to the stone bound, witnessed and approved by the OWNER. Points shall be in locations that will not be disturbed by other construction operations until the bound has been set.

After each stone bound has been set in place and backfilled, the CONTRACTOR will mark the exact survey point in the presence of the OWNER and drill a hole of approximately three-eighth inch diameter to a depth of approximately one-half inch deep.

If, as a result of negligence by the CONTRACTOR, ties are lost or deemed unreliable by the OWNER, it will be the responsibility of the CONTRACTOR to hire a Registered Professional Land Surveyor to conduct a survey to replace such points. The cost of the surveyor and all equipment, materials and manpower shall be paid by the CONTRACTOR at no additional cost to the City.

**MEASUREMENT:** Measurement for stone bound frame and cover shall be for the number of bounds reset as determined from actual count by the OWNER.

**PAYMENT:** Payment for stone bounds removed and reset shall be made for the number of stone bounds reset and accepted as determined above at the Contract unit price for ITEM 711.000 as set forth in the Bid. Said price and payment shall be full compensation for all materials including gravel and concrete, for all excavation, backfilling, tools, labor, and all else incidental thereto.

**Payment Items**

711.000	Stone Bound Removed and Reset	Each
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**STONE BOUND FRAME AND COVER**

**GENERAL:** This work shall consist supplying and installing a cast iron cover over an existing stone bound where there is a change in grade as required by the OWNER.

**MATERIALS:** Cover shall be S208-6 as supplied by LeBaron Foundry Inc., Brockton, Massachusetts or an approved equal.

**METHODS:** All excavation shall be done by hand. Covers shall be installed on undisturbed earth with the cover set to the level of the finished grade.

If, as a result of negligence by the CONTRACTOR, the stone bound is moved or broken it shall be the responsibility of the CONTRACTOR to hire a Registered Professional Land Surveyor to conduct a survey to properly locate the stone bound point and the CONTRACTOR shall reset the bound to accurate line and grade. The cost of the replacement, including the surveyor and all equipment, materials and manpower shall be paid by the CONTRACTOR at no additional cost to the City.

**MEASUREMENT AND PAYMENT:** Measurement for stone bound frame and cover shall be for the number of stone bound frame and cover sets installed and accepted as determined from actual count by the OWNER. Payment for stone bound frame and cover shall be made for the number of stone bound frame and cover sets accepted by the OWNER as determined above at the Contract unit price for ITEM 711.100 as set forth in the Bid. Said price and payment shall be full compensation for all materials, for all excavation, backfilling, tools, labor, and all else incidental thereto.

**Payment Items**

711.100	Stone Bound Frame and Cover	Each
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**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. Respreading of existing on-site loam shall be part of ITEM 765.000 and will not be included with as part of this item.

**METHOD:** 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 spreading 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 the spreading of existing on-site loam. That shall be considered as part of ITEM 765.000 (SEEDING).**

**Payment Items**

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

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

**METHOD:** 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 resspreading of existing on-site loam. This shall be considered as incidental to the work within this item.

**Payment Items**

765.000	Seeding	Square Yard
751.000	Loam Borrow	Cubic Yard

## LOOP DETECTORS AND LEAD-IN WIRES

**GENERAL:** This work shall consist of furnishing and installing loop detectors and lead-in wires in areas of resurfacing where the existing loops and lead-ins are removed due to excavation operations. The work shall be done by the CONTRACTOR to the satisfaction of the OWNER.

**MATERIALS AND METHODS:** The CONTRACTOR shall obtain an electrical permit from the City of Waltham Wire Inspector prior to construction. The CONTRACTOR shall notify the City of Waltham Wire Inspector 60 day's prior to start of work. All traffic signal equipment and related items (such as pavement markings and signs) shall be in place and permission obtained from the City of Waltham Wire Inspector prior to the traffic signal being turned on stop and go operation.

Before starting any installation work, the electrical CONTRACTOR shall furnish data sheets and shop drawings on the materials and methods to be used.

In advance of the loop detector installation, the CONTRACTOR shall mark, on site, the loop detectors with any changes required by field conditions such as manholes. The loop detector layout shall be inspected and approved by the OWNER before the loop detectors are installed.

Loop wire shall be encased in a protected plastic tubing of PVC or polyethylene plastic, IMSA 51-5, 0.25 inch outside diameter, and the wire may have cross-linked polyethylene insulation or it may have THHN/THWN insulation.

Splicing insulator shall be an approved re-enterable rigid body splice kit with a non-hardening sealing compound compatible with the wire insulation.

**Splice and Connection:** Splicing and connection shall be made in the pull box nearest the roadway loop sensor but not exceeding four loops per pull box. All loops included in a detector group as shown on the plans shall be spliced in a single pull box. Each lead and lead-in connector shall be stripped back and spliced using a pressure type wire connector applied with a crimping tool. Multiple loop sensors shall be identified as detailed on the plans.

Lead-in splicing shall be staggered to prevent contact with each other. Each crimped splice shall be soldered and insulated. The insulation material shall be heat-shrunked polyolefin. The shielded lead-in cable outer jacket and shield shall be stripped back sufficiently to ensure that the shield cannot come into contact with the spliced conductors. Follow the instructions of the kit manufacturer for this procedure when installing the re-enterable splice kit.

**NOTE WELL:** The above splice shall be done on the day of the loop wire installation to prevent the entrance of any moisture into the plastic tubing.

The lead-in conductors shall be connected to the appropriate terminals in the controller cabinet, by using crimped or soldered terminal ends. The heat source for soldering shall be electrical not exceeding 30W capacity.

**Testing of Loops:** The following test procedure shall be performed in the presence of the OWNER before and after the loop sensor is sealed in the pavement as detailed below. The cost of equipment, labor, and

materials to perform such testing and similar re-testing following repairs, replacement, or adjustment of any detector within the project area shall be included in the contract unit price for this Item.

After installation of wire loop sensors in the roadway and installation of shielded lead-in connecting the loop sensors to the controller cabinet each loop sensor and lead-in combination shall be tested (at the controller cabinet) for proper installation. The resistance from lead to lead of the same loop shall not exceed three ohms per one thousand feet as measured by a high quality meter suitable for measurements of low resistance in the range of 1 to 6 ohms.

A megohm meter test at 500 volts DC shall be made between the two leads of a loop/lead-in combination temporarily spliced together, but otherwise disconnected from all terminals, and the shield drain wire and the earth ground connection. These resistances shall be at least one hundred megohms.

A megohm meter test at 500 volts DC shall be made between lead-in shield and the earth ground rod. This resistance shall be at least one hundred megohms.

The meter used for these tests shall be checked for calibration each day of use by using a resistor block of plus or minus 5% resistors simulating loads of 1 megohm, 20 megohm and 100 megohms. The observed meter reading shall be plus or minus 10% of the nominal resistor load.

If any loop sensor and lead-in combination fails to pass any one of the four tests, it shall be repaired and then re-tested on two occasions at least two weeks apart and then shall pass on each re-test occasion. If the loop sensor lead-in combination does not pass all these re-tests, a new loop sensor and/or lead-in shall be installed, and shall pass these tests, at no additional cost.

After the above tests have been satisfactorily completed, all loop sensor/shielded lead-in inductance shall be measured and a written report of the results shall be filed with the OWNER and a copy stored with the "box prints" at the intersection.

**MEASUREMENT AND PAYMENT:** Measurement for loops furnished, installed and accepted by the OWNER shall be the nominal length of the loop detector and lead-in, not the length of wires. Payment for loop detectors and lead-in wires shall be made as determined above at the contract unit price for ITEM 819.837 as set forth in the Bid. Said price and payment shall be full compensation for furnishing and installing all detectors and lead-ins, all associated materials required, all testing of detectors after installation, and all else incidental thereto to complete the work within this item. All work shall be done to the satisfaction and the approval of the OWNER.

**Payment Item**

819.837	Loop Detectors with Lead-In Wires	Linear Foot
801.300	3" PVC Electrical Conduit	Linear Feet

**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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**4" TEMPORARY PAINTED LINE**

**GENERAL:** This work shall including temporary paint for traffic control following cold planing in locations required by the OWNER. 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 shall be approved by the OWNER. Application shall be sufficient to last until the wearing course of pavement has been applied.

**MEASUREMENT:** Measurement for temporary painted lines shall be for the actual number of linear feet furnished and installed by the CONTRACTOR and accepted by the OWNER.

**PAYMENT:** Payment for temporary painted lines shall be for the actual linear feet as determined above at the contract unit price for ITEM 854.014 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. All work is subject to final approval and acceptance by the OWNER.

**Payment Items**

854.014	4" Temporary Painted Line	Linear Foot
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**PAVEMENT ARROWS AND LEGENDS**

**REFLECTORIZED 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 Arrows and Legends ReflectORIZED Thermoplastic	Square Foot
865.100	X - Walks and Stop Lines ReflectORIZED White (Thermoplastic)	Square Foot
868.040	4" ReflectORIZED Thermoplastic Line	Linear Foot



## REFLECTORIZED PAVEMENT MARKINGS

**GENERAL:** These items of work consists of furnishing materials and the application of ReflectORIZED Pavement Markings in accordance with the Commonwealth of Massachusetts, Department of Public Works, Manual on Uniform Traffic Control Devices, current edition.

Materials shall be as specified under the particular payment item being used and shall meet the appropriate requirements specified in the following MassDOT subsections of Division III, Materials:

General Requirements for Paints and Protective Coatings	M7.00.00
White Thermoplastic ReflectORIZED Pavement Markings	M7.01.03
Yellow Thermoplastic ReflectORIZED Pavement Markings	M7.01.04
White Traffic Paint	M7.01.05
Yellow Traffic Paint	M7.01.06
Glass Beads	M7.01.07
White High Heat Rapid Drying Traffic Marking Material	M7.01.08
Yellow High Heat Rapid Drying Traffic Marking Material	M7.01.09
Fast Drying White Traffic Paint	M7.01.10
Fast Drying Yellow Traffic Paint	M7.01.11
Striping Powder	M7.01.12
Preformed Permanent Plastic Pavement Markings or Legends	M7.01.18
Thermoplastic Pavement Marking Compound, Alkyd	M7.01.20
Green Pavement Coatings	M7.01.21

**EQUIPMENT:** All equipment used for the application of pavement markings shall be of standard commercial manufacture. All other equipment and devices necessary for the application of the pavement markings and protection thereof and for the protection to the traveling public shall be usually required for work of this type and shall be furnished by the Contractor.

The pavement marking equipment shall be operated at the speed and in accordance with other requirements of the manufacturer, unless otherwise directed by the Engineer.

Truck mounted equipment is approved for the application of pavement markings except in such cases where in the Engineer's judgment travel will be unreasonably delayed and/or the quality of the work performed by the machine unsatisfactory.

**LAYOUT OF WORK:** A schedule of pavement marking operations shall be furnished by the Contractor for the approval of the Engineer prior to the application of any pavement markings. This schedule must be in the office of the Engineer 7 days prior to the proposed date of application of any pavement markings.

**APPLICATION OF MARKINGS:** Pavement markings shall be applied as follows:

Material	Material Application Temperature	Line Thickness	Reflectorized Bead Application
M7.01.05	115°F-125°F	15 mils	6 lbs/gal
M7.01.06	115°F-125°F	15 mils	6 lbs/gal
M7.01.08	180°F-195°F	15 mils	6 lbs/gal
M7.01.09	180°F-195°F	15 mils	6 lbs/gal
M7.01.10	40°F-120°F	15 mils	6 lbs/gal
M7.01.11	40°F-120°F	15 mils	6 lbs/gal
M7.01.03	400°F-425°F	128-188 mils	1#10 SF Drop on
M7.01.04	400°F-425°F	125-188 mils	1 #10 SF Drop on

No thinners shall be used for the above listed pavement marking application except in accordance with the manufacturer’s specifications and at the direction of the Engineer.

No paint or pavement marking material shall be heated above the temperature marked on the container.

Markings shall be applied only in seasonable weather and in accordance with good painting practices. The surface shall be dry and free of sand, grease, oil or other foreign substances prior to the application. The Contractor shall prepare the surface to accept the application as part of this item, with no additional compensation. The Engineer will make the final determination for all of the foregoing.

Bituminous concrete pavements shall have been in place for 48 hours prior to the application of pavement markings except preformed permanent plastic pavement markings which can be applied immediately. When it is necessary to expedite the flow of traffic, the Engineer may reduce the waiting period as deemed necessary.

If for any reason material is spilled or tracked on the roadway, or any markings applied by the Contractor, in the Engineer’s judgment, fail to conform to Layout of Work, because of deviation from the desired pattern, the Contractor shall remove such material by a method that is injurious to the roadway surface and is acceptable to the Engineer, clean the roadway surface and prepare the surface for a reapplication of markings and reapply the markings as directed without additional compensation for any of the foregoing corrective operations.

The ambient (air) temperature for thermoplastic application is to be a maximum of 45°F and rising at the time of marking operations. If work has started and air temperatures fall below 45°F and continuous cooling is indicated, work shall be stopped. In cool weather conditions, temporary drops down to 40°F will be tolerated, providing temperatures also vary upwards. Sustained striping (greater than one hour) at 40°F shall not be allowed. Starting work at air temperatures lower than 45°F shall not be allowed.

**PROTECTION OF MARKINGS:** Markings shall remain protected until sufficiently dry to bear traffic on roadways that are open to traffic. Markings shall be protected by traffic cones of not less than 28" in height except in case of markings which cure to a no track condition in 180 seconds or less in the latter case protection may be provided by a convoy of vehicles with suitable warning devices to warn overtaking or oncoming traffic that the pavement marking operation is in progress.

**A. Broken Lines.**

On tangents and on curves of 1000 foot radius or greater at least 1 cone shall be placed on every other bar. On curves of less than 1000 foot radius 1 cone shall be placed one very bar unless otherwise directed by the Engineer.

**B. Solid Lines.**

On tangents and on curves of 1000 foot radius or greater, cones shall be spaced not over 80 feet apart and on curves of less than 1000 foot radius the spacing shall be not over 50 feet unless otherwise directed by the Engineer. On edge line adjacent to the median wider spacing may be used at the direction of the engineer. In order to control the proper positioning of the cones during the drying period, the Contractor shall assign sufficient personnel as determined by the Engineer. Such control is dependent on traffic density, cone widths, etc.

**ACCOMODATION OF TRAFFIC:** All warning signs and traffic control devices as required shall be in accordance with MassDOT Section 850. Work under this item may be suspended, at the discretion of the Engineer, during peak traffic hours or at any other time when, in his judgement, traffic is being unduly hampered or delays by the work, under this item.

**MEASUREMENT:** Markings are to be paid for on the actual length of lines applied under the various items of the Contract. The lengths of solid lines will be obtained by:

1. Calculation from established base line stations or
2. Use of a measuring wheel or
3. Vehicle odometer readings.

The length of broken lines (except for broken lines less than 10 feet, the actual length shall be used) will be obtained by using  $\frac{3}{4}$  of the results obtained above for the solid lines. Patterns, other than lines, are to be paid for by the square foot area under the item in the Contract.

**PAYMENT:** The work under these items will be paid for at the contract unit price under each item of the Contract based on the measurements as determined by the Engineer.

The contract prices shall include all material, labor and equipment required or incidental to the satisfactory completion of the work.

**Payment Items**

864.040	Pavement Arrows and Legends Reflectorized White Thermoplastic	Square Foot
865.100	X - Walks and Stop Lines Reflectorized White (Thermoplastic)	Square Foot
868.040	4" Reflectorized Thermoplastic Line (White or Yellow)	Linear Foot

**PORTABLE MESSAGE BOARD**

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

**MEASUREMENT AND PAYMENT:** Measurement for each Portable Message Board shall be per day whenever boards are required and accepted by the OWNER. Payment for Portable Message Boards shall be as determined above at the contract unit prices for ITEM 870.000 as set forth in the Bid. Said price and payment shall be full compensation for furnishing equipment and programming, locating and relocating message boards as required by the OWNER. All work is subject to final approval and acceptance by the OWNER.

**Payment Items**

870.000	Portable Message Board	DAY
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## TRAFFIC POLICE

**GENERAL:** The CONTRACTOR shall provide such uniformed police officers (outside their regular tour of duty) as the OWNER shall deem necessary to avoid, so far as reasonably possible, damage to the safety of persons and substantial interference with the free circulation of traffic. When so required by the OWNER, the CONTRACTOR shall make all arrangements in obtaining police assistance. The CONTRACTOR shall pay the amount due for such assistance to the City of Waltham. The CONTRACTOR shall then be reimbursed by the City of Waltham. Police details may be arranged by calling (781) 314-3604.

All bills for police details must be paid in full by the CONTRACTOR before reimbursement is made by the City of Waltham. Only bills stamped "PAID" by the City Treasurer's Office will be accepted by the OWNER.

**METHOD OF PAYMENT:** The CONTRACTOR shall pay to any police officer employed by him the prevailing rate of wage to special duty police officers (MGL Chapter 149, §34B). The quantity on the Bid form for ITEM 999.001 is an estimate for funding and bid comparison purposes. Payment to the CONTRACTOR for special duty police will be made at the rate established by the Waltham Police Department.

Payment shall be made by the CONTRACTOR within 30 days of billing. Failure to pay an outstanding bill within 30 days may result in a penalty charge to the CONTRACTOR for late payment. There will be no reimbursement for any penalties or late charges that may be assessed against the CONTRACTOR for late payment. Furthermore, the OWNER will accept no further requests for payment if police detail bills are more than 30 days in arrears.

The CONTRACTOR will not be reimbursed for any detail that he fails to cancel when it is not required (work does not proceed as scheduled or due to inclement weather, etc.) Reimbursement will be entered in the next estimate for payment.

Reimbursement shall be made on all bills stamped "PAID" by the City of Waltham Treasurer's Office and presented to the OWNER less any amount for unnecessary details not canceled by the CONTRACTOR when required.

It is suggested that payments be made in person at the Treasurer's Office and that a copy of the bill be presented to the Treasurer's Office at the same time so that it may be stamped "PAID" and presented to the OWNER by the CONTRACTOR.

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

### Payment Item

999.001

Traffic Police

Per Dollar

## APPEXDIX A

### RESTRICTED STREETS

The following list of streets have restricted hours. No work shall be performed on restricted streets between the hours of 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. This CONTRACT may or may include work on the streets listed below.

#### Streets with restricted work hours

Bacon Street

Bear Hill Road

Beaver Street

High Street

Lexington Street

Linden Street

Main Street

Maple Street

Newton Street

Pine Street

Prospect Street

River Street

Second Avenue

Smith Street

South Street

Stow Street

Totten Pond Road

Trapelo Road

Waverly Oaks Road

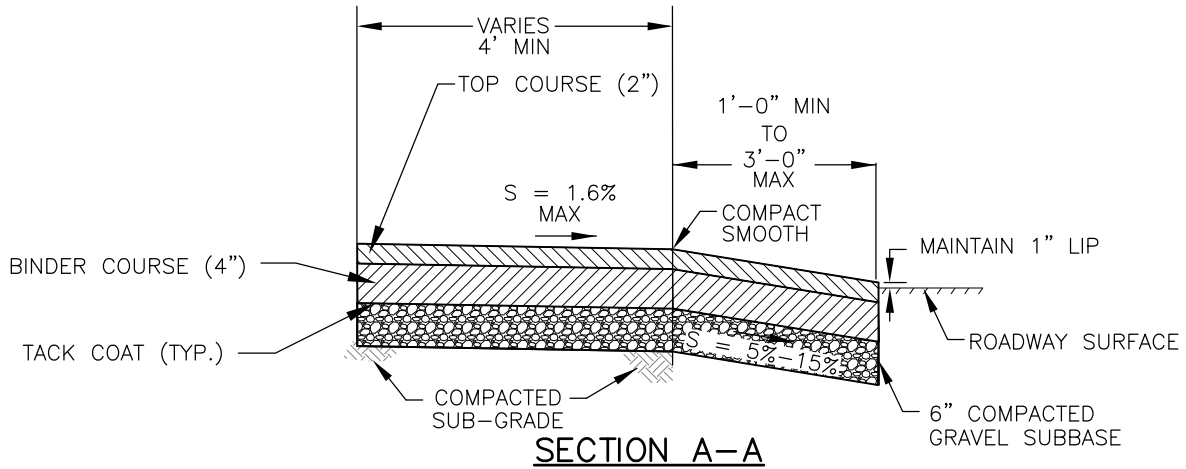
Weston Street

Winter Street

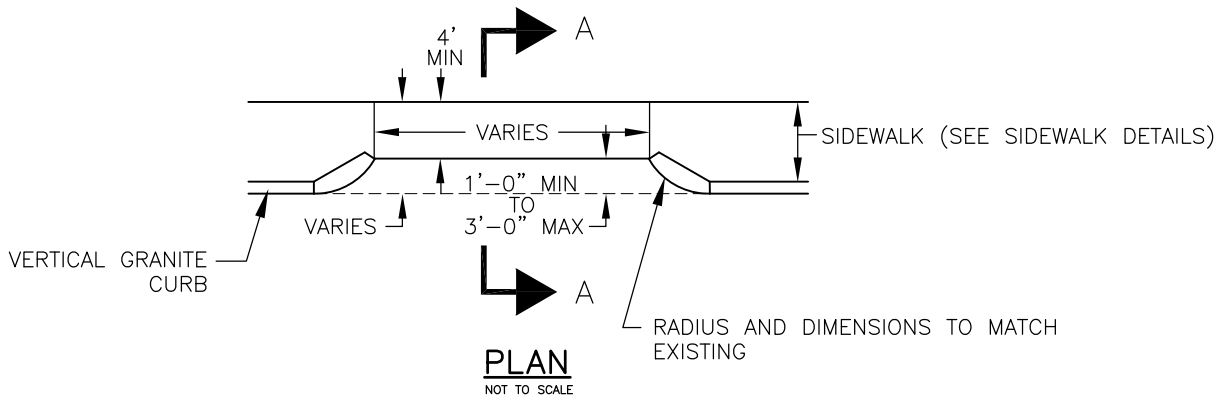
Wyman Street



# **DRAWINGS**

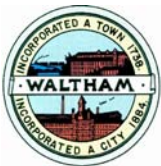


**SECTION A-A**



**PLAN**  
NOT TO SCALE

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CITY OF WALTHAM, MA.  
ENGINEERING DEPARTMENT

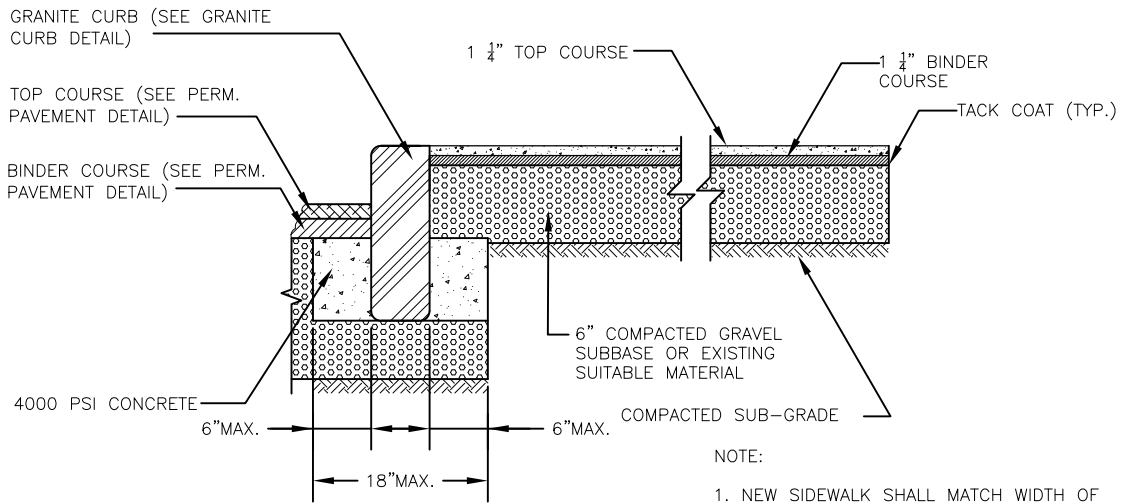
STANDARD DETAILS

BITUMINOUS  
CONCRETE APRON

460.001.1

Sheet No.  
460.001.1

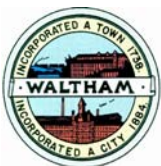
Scale  
NTS



**BITUMINOUS CONCRETE SIDEWALK DETAIL**

NOT TO SCALE

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CITY OF WALTHAM, MA.  
ENGINEERING DEPARTMENT

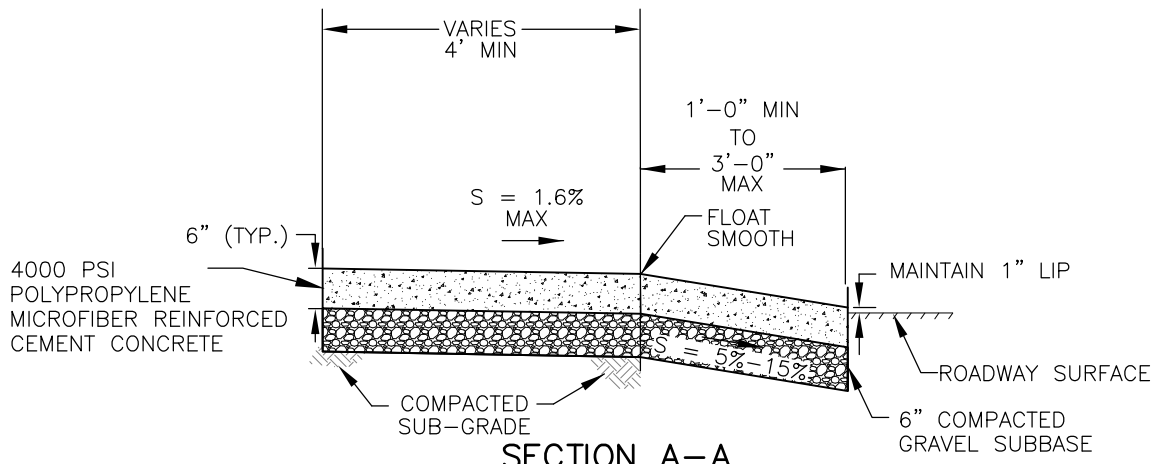
STANDARD DETAILS

BITUMINOUS  
CONCRETE SIDEWALK

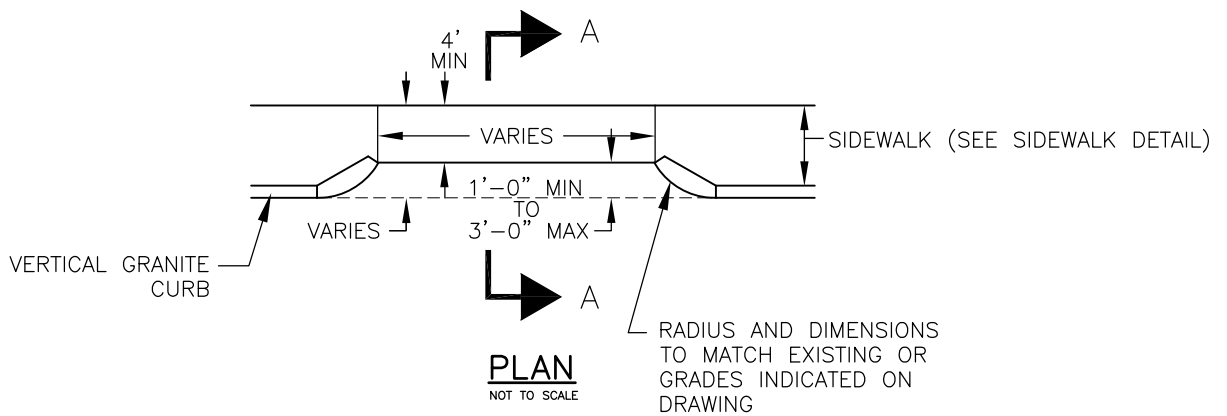
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Sheet No.  
460.001.2

Scale  
NTS



**SECTION A-A**

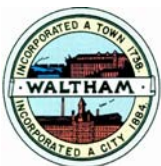


**PLAN**  
NOT TO SCALE

**CEMENT CONCRETE DRIVEWAY APRON**

NOT TO SCALE

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CITY OF WALTHAM, MA.  
ENGINEERING DEPARTMENT

STANDARD DETAILS

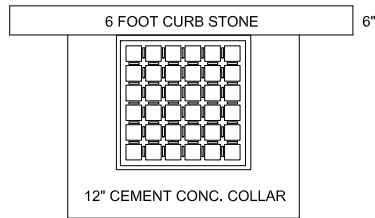
CEMENT CONCRETE  
DRIVEWAY APRON

701.002

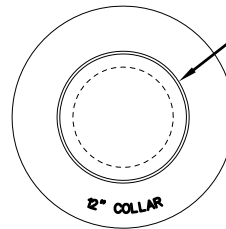
Sheet No.  
701.002

Scale  
NTS

LEBARON FRAME LF246  
 3-FLANGE FOR CURBING  
 INSTALLATION  
 CASCADE GRATE  
 (PER SPECIFICATION)

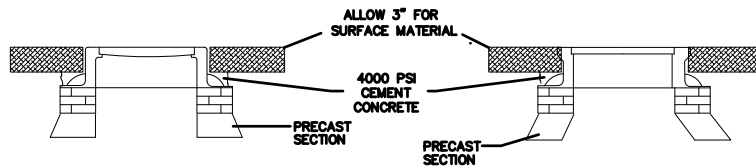


30" MANHOLE COVER WITH 39" FLANGE

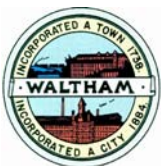


STANDARD FRAME/RING COVER  
 LEBARON RING LA326  
 COVER L32C4  
 COVER SHALL BE IMPRINTED  
 WITH THE WORD "DRAIN"

ADJUSTMENT TO CASTING  
 MADE WITH A MAXIMUM  
 OF THREE COURSES OF  
 RED HARDENED BRICK



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CITY OF WALTHAM, MA.  
 ENGINEERING DEPARTMENT

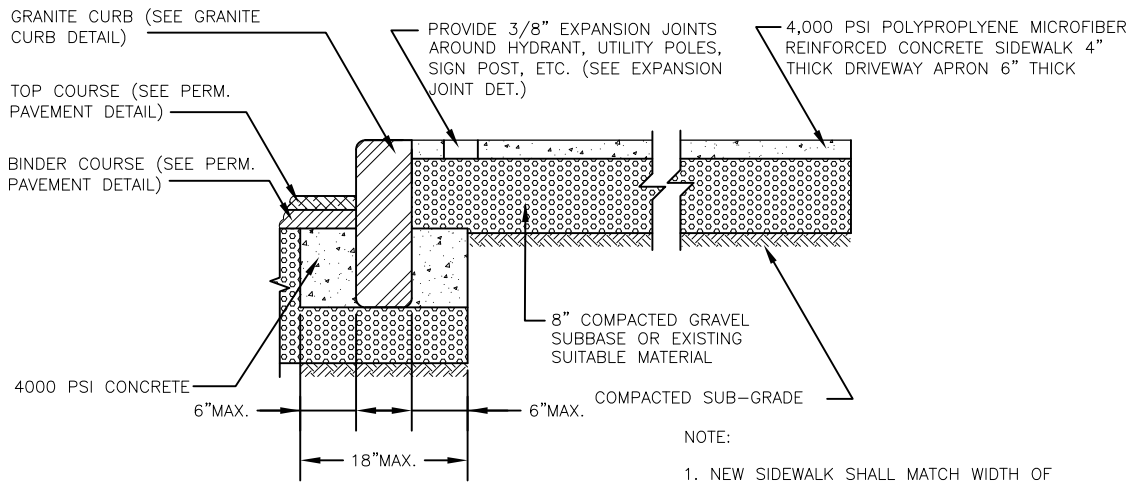
STANDARD DETAILS

CONCRETE COLLARS FOR  
 DRAIN MHs AND CBs

701.002

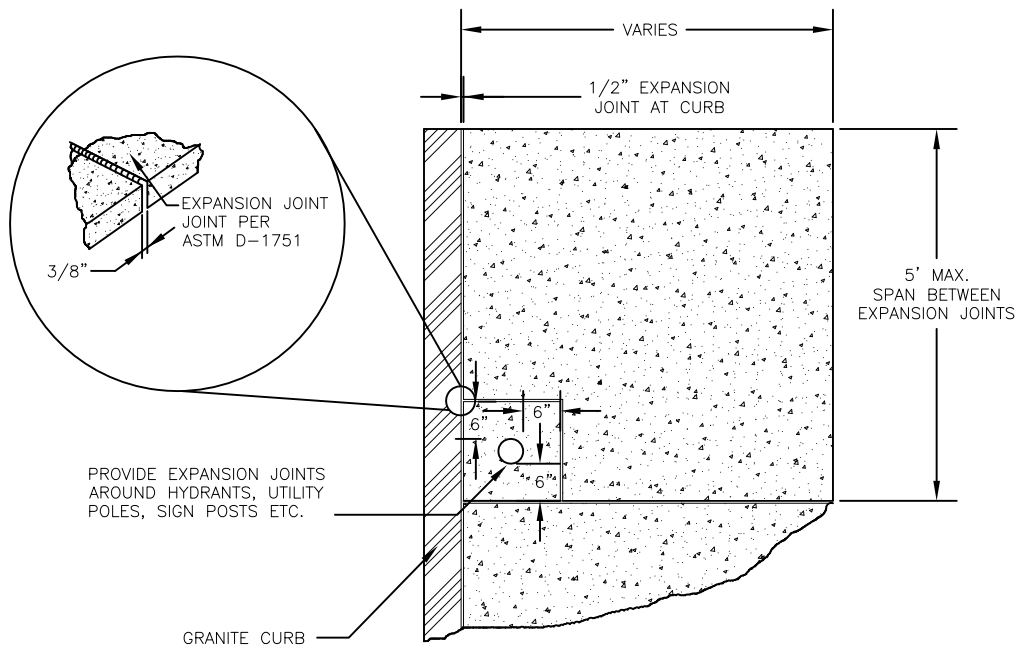
Sheet No.  
 201.002

Scale  
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**CONCRETE SIDEWALK DETAIL**

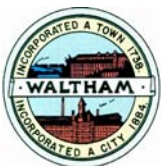
NOT TO SCALE



**CONCRETE SIDEWALK EXPANSION JOINT DETAIL**

NOT TO SCALE

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CITY OF WALTHAM, MA.  
ENGINEERING DEPARTMENT

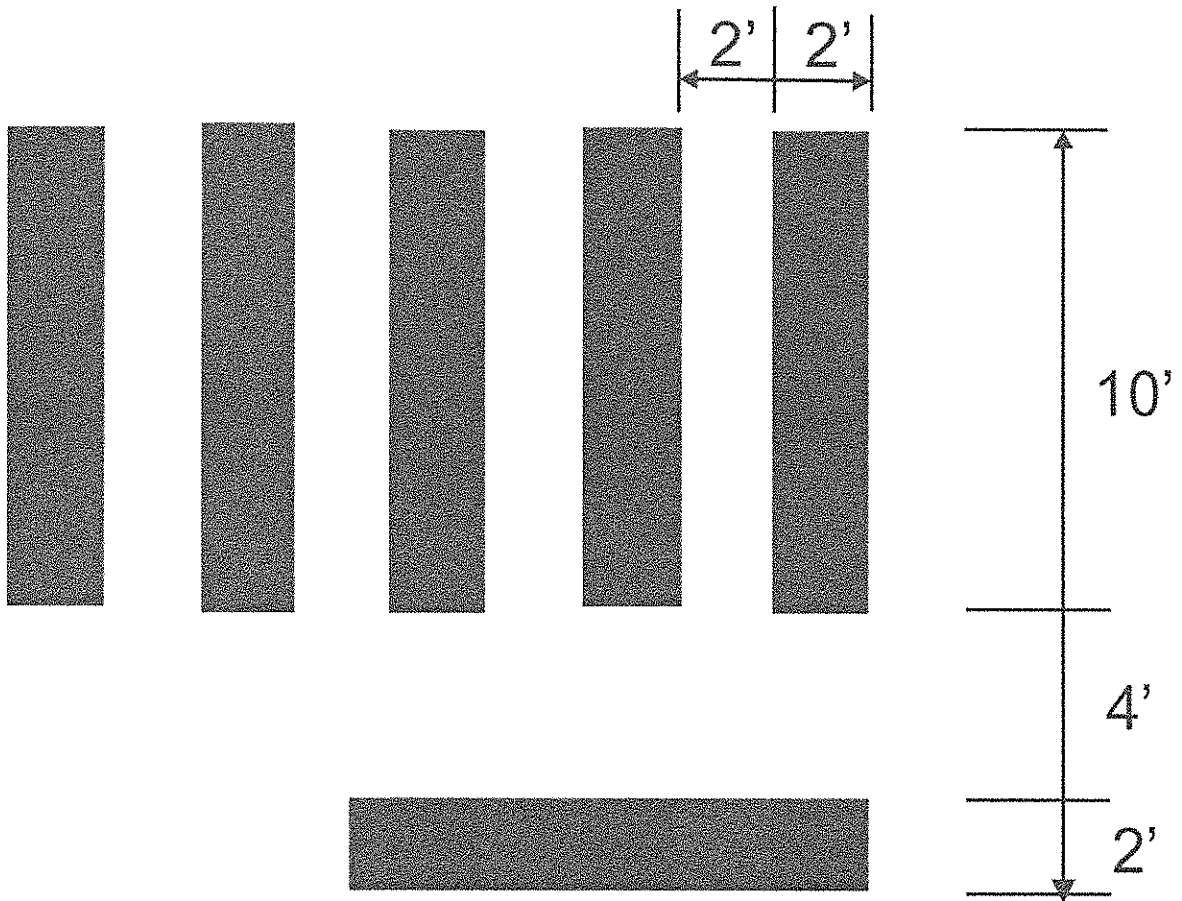
STANDARD DETAILS

CONCRETE SIDEWALK

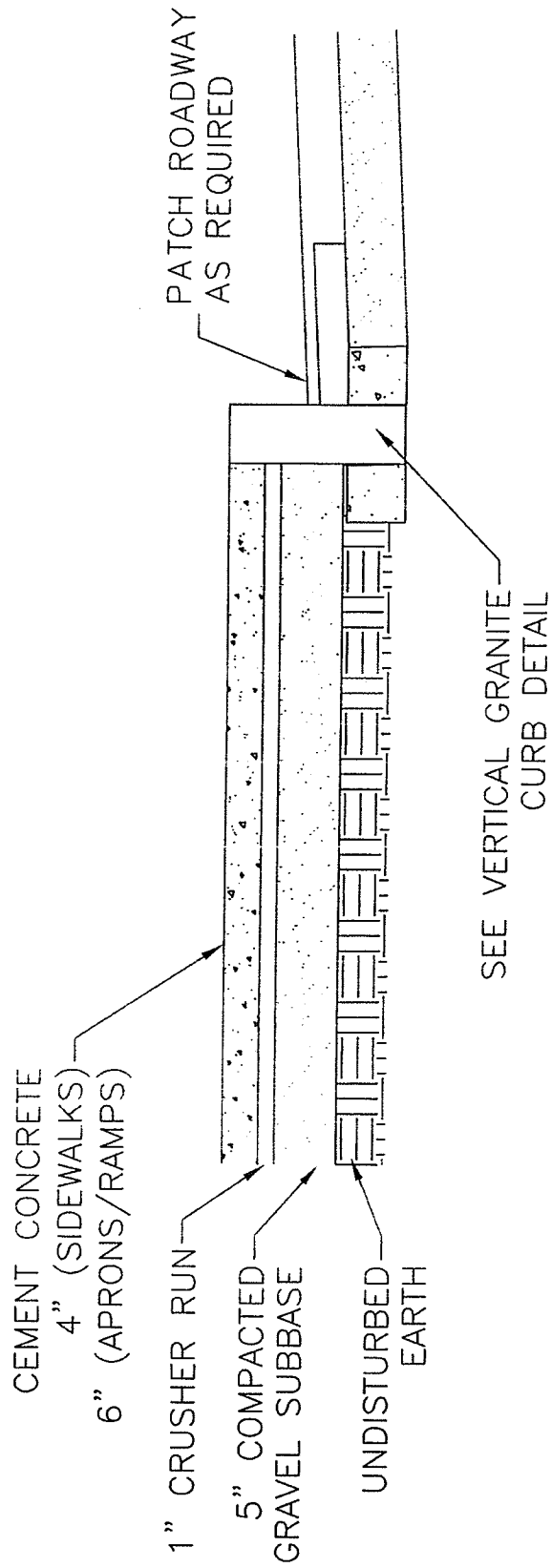
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701.000.1

Scale  
NTS



# CITY OF WALTHAM STANDARD CROSSWALK



SIDEWALK CROSS-SECTION

FIGURE NAME:

4" / 6" CEMENT CONCRETE SIDEWALK

SCALE:

NOT TO SCALE

CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT  
STANDARD DETAILS

REV. DATE:

3/30/2011



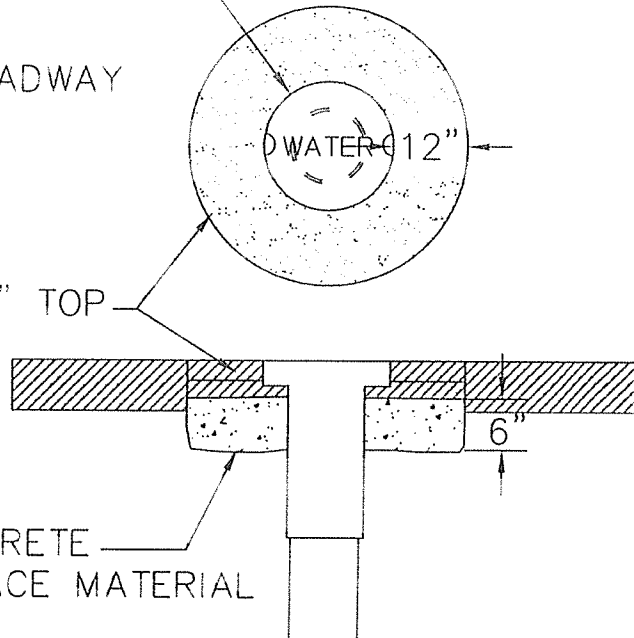


HEAVY DUTY GATE BOX  
COVER MARKED "WATER"  
SEE NOTE 1.

GATE BOX LOCATED IN ROADWAY

1 1/2" BINDER AND 1 1/2" TOP  
PROPERLY COMPACTED

6" CEMENT CONCRETE  
ALLOW 3" FOR SURFACE MATERIAL



NOTES:

1. VALVE BOX COVER SHALL BE EJ PRESCOTT  
PRODUCT NO.45005 600 OR APPROVED EQUAL.
2. VALVE BOX SHALL BE TWO-PIECE, CAST IRON  
SLIDING TYPE, WITH TOP FLANGE VALVE BOX  
AND BELL SECTION BASE.

GATE BOX COLLAR DETAIL

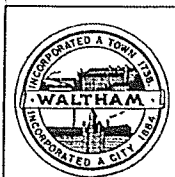


FIGURE NAME:

WATER GATE BOX COLLAR DETAIL

SCALE:

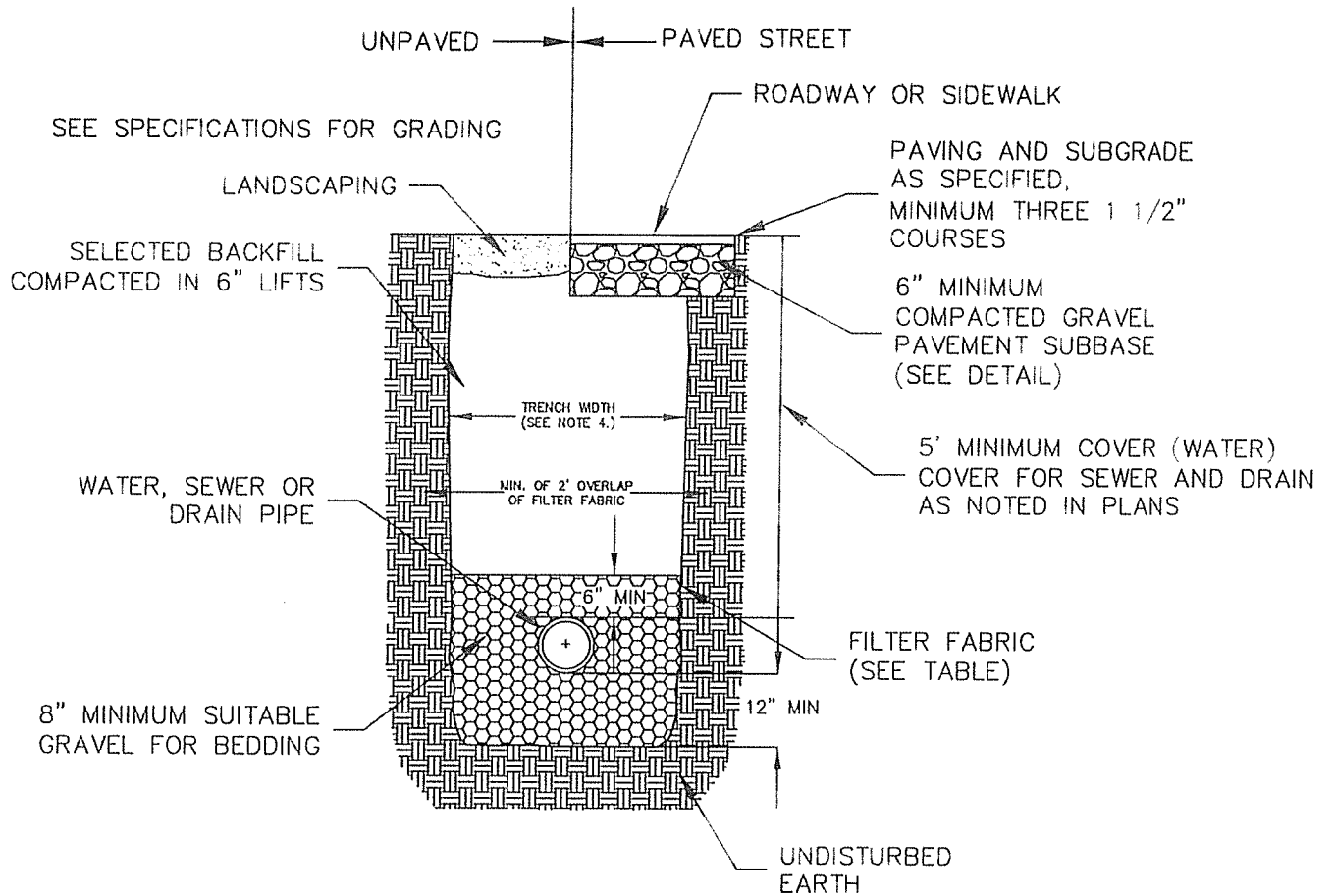
NOT TO SCALE

CITY OF WALTHAM, MA. – ENGINEERING DEPARTMENT  
STANDARD DETAILS

REV. DATE:

3/30/2011

85  
89



NOTES:

1. ALL TRENCHES MUST BE JETTED OR PUDDLED AS REQUIRED BY THE ENGINEER.
2. PRIOR TO FINISHING PAVING, CUT SQUARE EDGES AT EXISTING PAVEMENT, AT LEAST 6 INCHES BEYOND OUTERMOST DISTURBED PAVEMENT.
3. NO LEDGE TO BE WITHIN 6" OF PIPE.
4. TRENCH WIDTH:

LEDGE: OUTSIDE DIAMETER OF PIPE PLUS 2 FEET

EARTH: GREATER OF LEDGE VALUE OR 3 FEET (OR AS DETERMINED BY THE ENGINEER)

FILTER FABRIC USE

	SOIL TYPE	
	SILT OR CLAY	GRANULAR SOIL
ABOVE GROUND WATER	FILTER FABRIC NOT REQUIRED	FILTER FABRIC NOT REQUIRED
BELOW GROUND WATER	FILTER FABRIC REQUIRED	FILTER FABRIC NOT REQUIRED

## WATER, SEWER, AND DRAIN TRENCH DETAIL

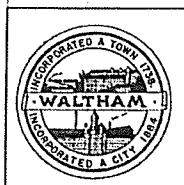
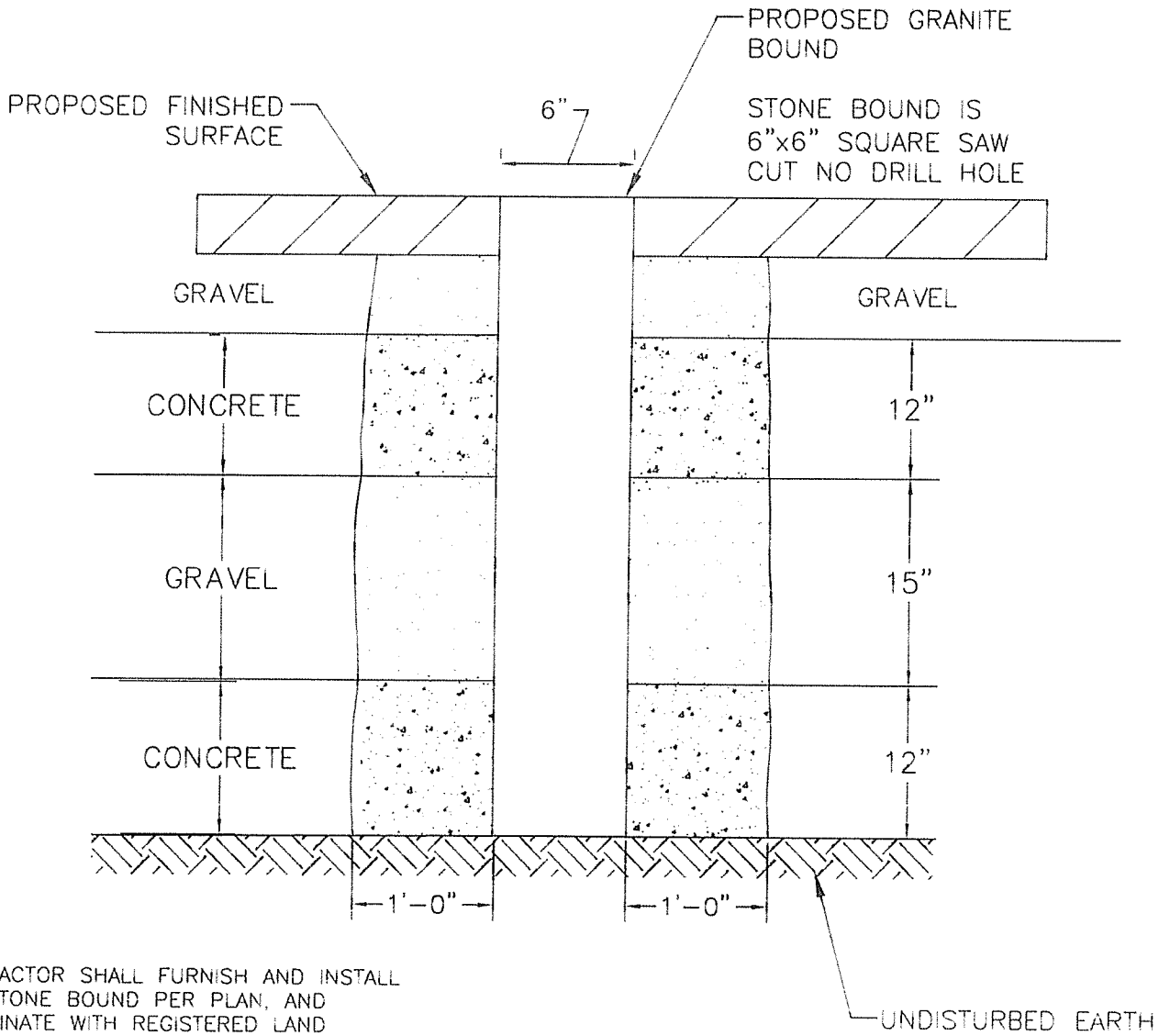


FIGURE NAME: TRENCH DETAIL

CITY OF WALTHAM, MA. — ENGINEERING DEPARTMENT  
STANDARD DETAILS

SCALE: NOT TO SCALE


REV. DATE: 3/30/2011 90



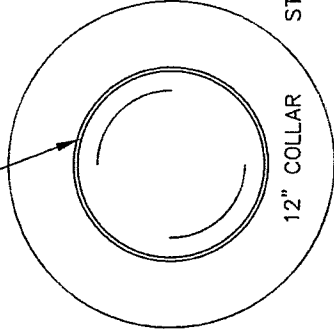
**NOTES:**

1. CONTRACTOR SHALL FURNISH AND INSTALL NEW STONE BOUND PER PLAN, AND COORDINATE WITH REGISTERED LAND SURVEYOR FOR EACH LOCATION.
2. DRILL HOLES SHALL BE SET BY REGISTERED PROFESSIONAL LAND SURVEYOR.

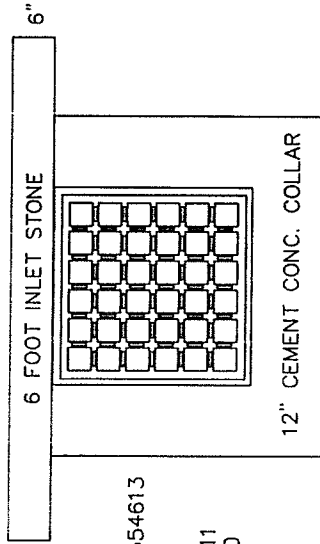
## STONE BOUND DETAIL

	<p>FIGURE NAME:</p> <p style="text-align: center;">STONE BOUND DETAIL</p>	<p>SCALE:</p> <p style="text-align: center;">NOT TO SCALE</p>
	<p style="text-align: center;">CITY OF WALTHAM, MA. – ENGINEERING DEPARTMENT</p> <p style="text-align: center;">STANDARD DETAILS</p>	<p>REV. DATE:</p> <p style="text-align: center;">3/30/2011</p>

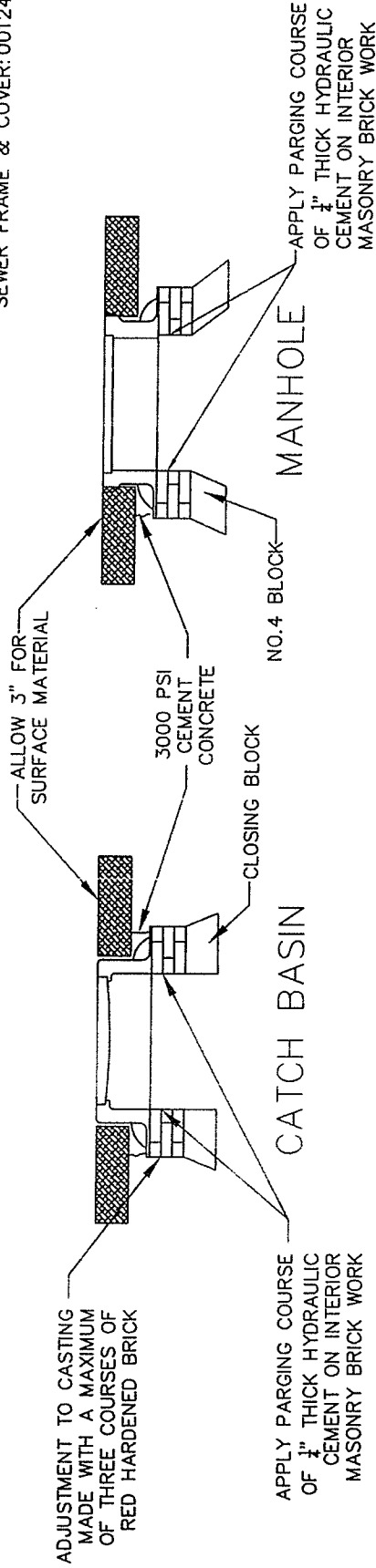
24" MANHOLE COVER WITH 32" FLANGE



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



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



ADJUSTMENT TO CASTING MADE WITH A MAXIMUM OF THREE COURSES OF RED HARDENED BRICK

APPLY PARING COURSE OF 1/4" THICK HYDRAULIC CEMENT ON INTERIOR MASONRY BRICK WORK

CATCH BASIN

MANHOLE

APPLY PARING COURSE OF 1/4" THICK HYDRAULIC CEMENT ON INTERIOR MASONRY BRICK WORK

### CEMENT CONCRETE COLLARS FOR MANHOLES AND CATCH BASINS

FIGURE NAME:

FRAMES, GRATES & CONCRETE COLLARS DETAIL

SCALE:

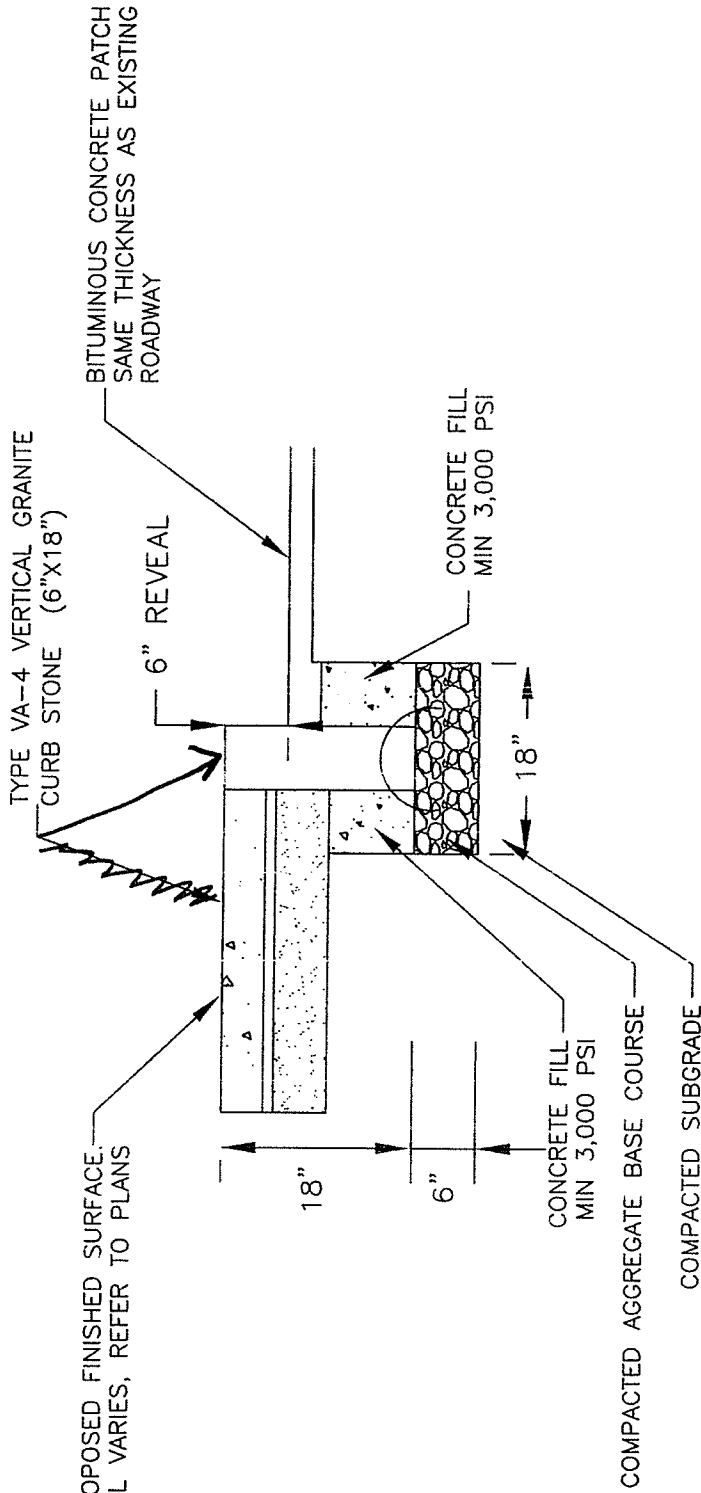
NOT TO SCALE

CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT  
STANDARD DETAILS

REV. DATE:

3/30/2011





TYPICAL VERTICAL GRANITE CURB DETAIL

FIGURE NAME:

TYPICAL VERTICAL GRANITE CURB DETAIL

SCALE:

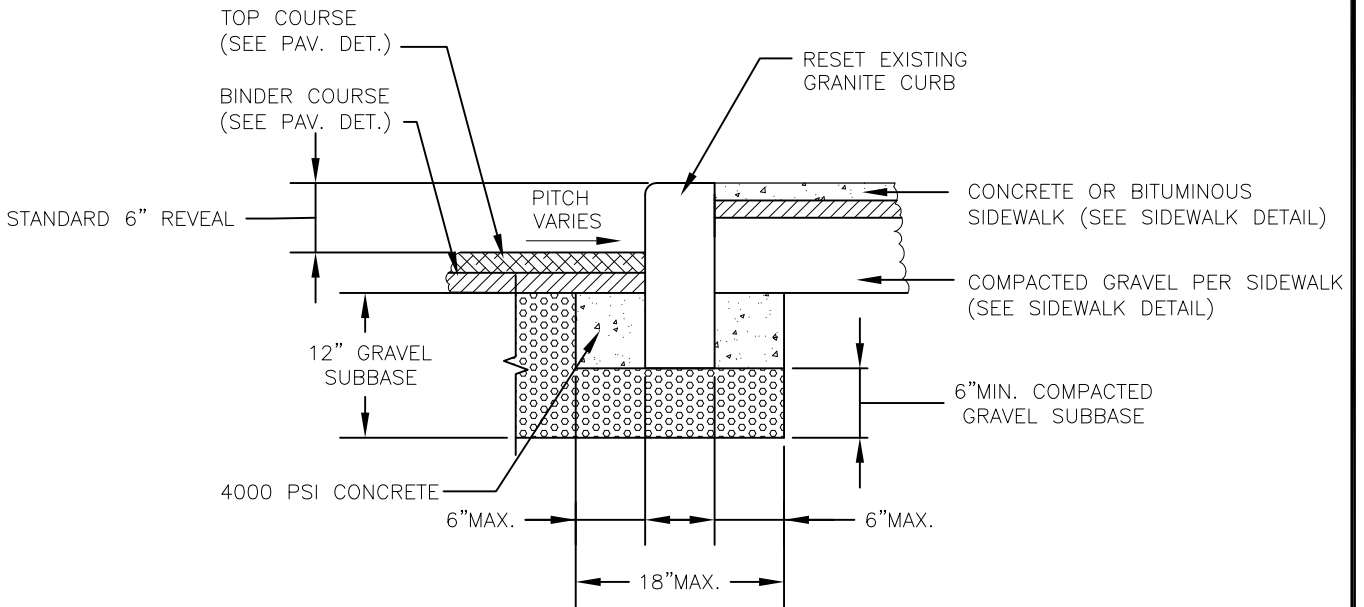
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CITY OF WALTHAM, MA. - ENGINEERING DEPARTMENT  
STANDARD DETAILS

REV. DATE:

3/30/2011

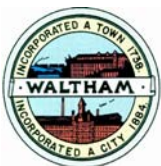




### GRANITE CURB DETAIL

NOT TO SCALE

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CITY OF WALTHAM, MA.  
ENGINEERING DEPARTMENT

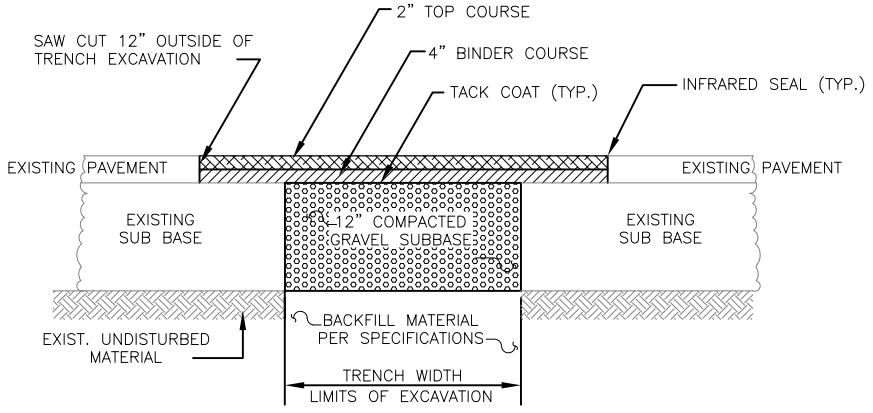
STANDARD DETAILS

GRANITE CURB DETAIL

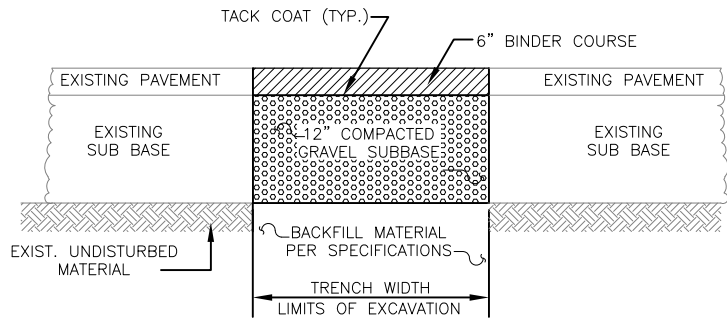
504.000 - 504.101

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504.000

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**PERMANENT PAVEMENT DETAIL**  
NOT TO SCALE

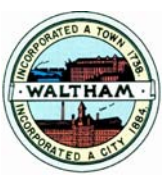


**TRENCH PAVEMENT DETAIL**  
NOT TO SCALE

GENERAL PAVING NOTES:

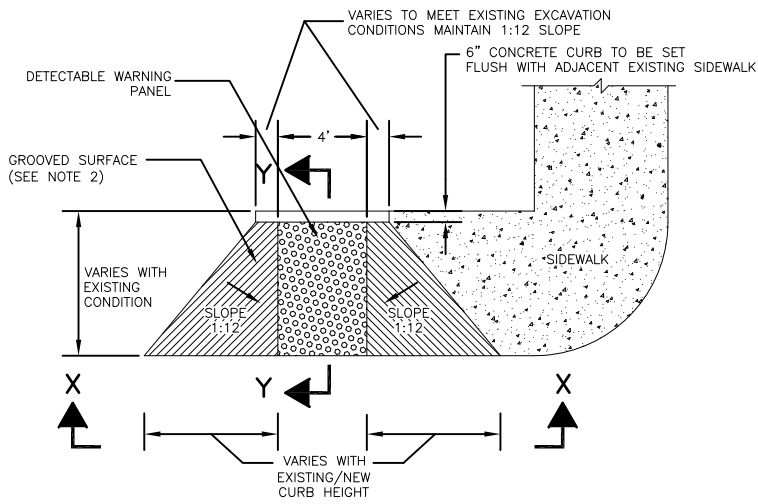
1. THE CONTRACTOR SHALL MAINTAIN TEMPORARY PAVEMENT FOR A MINIMUM OF 90 DAYS EXCEPT IF TEMPORARY PAVEMENT IS PLACED AFTER OCTOBER 1, THEN IT SHALL BE MAINTAINED UNTIL APRIL 15 OF THE FOLLOWING YEAR.
2. PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15 AND NOVEMBER 15 OF EACH CALENDAR YEAR.
3. THE CONTRACTOR SHALL SAW CUT 12" OUTSIDE OF TRENCH EXCAVATION. TEMPORARY PAVEMENT SHALL BE REMOVED AND DISPOSED OF. THE GRAVEL SHALL BE FINE GRADED, EMULSION PLACED ON ALL JOINTS, AND PERMANENT PAVEMENT PLACED IN TWO COURSES.
4. CONTRACTOR SHALL MATCH EXISTING ROADWAY GRADES.
5. INFRARED SEAL SHALL BE PLACED AT ANY JOINT BETWEEN EXISTING PAVEMENT AND PULVERIZED OR COLD PLANED AND OVERLAYED PAVEMENT AND AT ALL PERMANENT TRENCH PATCHES.

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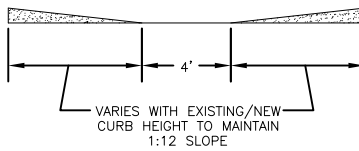


**CITY OF WALTHAM, MA.  
ENGINEERING DEPARTMENT**

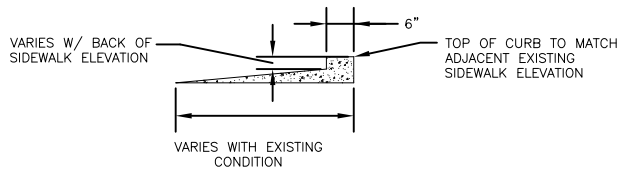
<b>STANDARD DETAILS</b>	Sheet No. <b>460.000</b>
<b>BIT. CONCRETE PAVEMENT</b>	Scale <b>NTS</b>
<b>460.000</b>	



**PLAN**



**SECTION X-X**



**SECTION Y-Y**

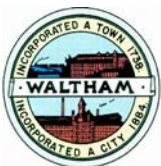
**HANDICAP RAMP DETAIL**

NOT TO SCALE

**GENERAL HANDICAP NOTES:**

1. REINFORCEMENT FOR HANDICAP RAMP SHALL BE THE SAME AS MICROFIBER REINFORCED CONCRETE FOR SIDE WALK.
2. THE FINISHED SURFACE OF HANDICAP RAMP IS TO BE GROOVED LATERALLY WITH 1/4" WIDE BY 1/4" DEEP GROOVES, SPACED 2-1/4" AND ROUGHENED WITH NO LESS THAN A BROOM FINISH TO PREVENT SLIPPING AND TO DIFFERENTIATE ITS TEXTURE FROM THAT OF STANDARD SIDEWALK.

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STANDARD DETAILS

CONCRETE WHEELCHAIR RAMP

701.000 - 701.101

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