

INVITATION FOR BIDS

(IFB #16-69)

Milk Row Cemetery Tomb FAÇADE REHABILITATION

Bid Opening: 11:00am March 15th, 2016



CITY OF SOMERVILLE, MASSACHUSETTS
Joseph A. Curtatone, Mayor

Purchasing Department
Angela M. Allen, Purchasing Director

Michael Richards, Procurement Analyst
City of Somerville
93 Highland Avenue
Somerville, MA 02143
PH: 617-625-6600 x3403

Milk Row Cemetery – TOMB FAÇADE REHABILITATION

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**PART 1 SECTION 00020:
CITY OF SOMERVILLE, MASSACHUSETTS
INVITATION TO BID
MILK ROW CEMETERY – TOMB FAÇADE REHABILITATION
Bid No. 16-69**

**Enclosed you will find an invitation to bid for:
MILK ROW CEMETERY – TOMB FAÇADE REHABILITATION
Milk Row Cemetery is located at 439 Somerville Ave, Somerville, MA 02143 in the Union
Square neighborhood.**

Plans and specifications will be available from 8:30 AM to 4:30 PM, Monday through Wednesday, 8:30 AM to 7:30 PM on Thursday, and 8:30 AM to 12:00 Noon, Fridays, at the Purchasing Department, 1st Floor, City Hall, 93 Highland Avenue, Somerville, MA 02143 beginning on **Wednesday, February 24th, 2016**. The bid specifications, the technical specifications and drawing are included as part of this bid package. The Purchasing Department may furnish the bid documents in print form on 8.5"x11" paper upon request. .

When submitting a bid, please identify the bid item and number clearly. All bids must be sealed and delivered to Purchasing Department, City of Somerville, 93 Highland Ave., Somerville, MA 02143, **no later than 11:00AM, on Tuesday, March 15th, 2016**. Please mark the outside of all bid envelopes with the following:
"Bid #16-69 Milk Row Cemetery".

BIDS SUBMITTED MUST BE AN ORIGINAL.

The completion of the following forms is necessary for consideration of a potential contract award. When submitting bid documents, please retain the order of documents as provided below:

- 1) Form for General Bid**
- 2) Bid Form for Alternates**
- 3) Somerville Living Wage Form**
- 4) Acknowledgement of Notice to Bidders**
- 5) Quality Requirements Form**
- 6) Certificate of Non-Collusion & Tax Compliance**
- 7) Certificate of Signature Authority**
- 8) OSHA Training Compliance Form**
- 9) Signature Form complete when submitting your bid.**
- 10) Reference Form**
- 11) 5% Bid Deposit**
- 12) 50% Payment Bond**
- 13) Wages, Statement of Compliance Form**

NOTE: If Vendor is incorporated, an updated "CERTIFICATE OF GOOD STANDING" from the Commonwealth of Massachusetts will be needed for the awarded vendor only.

CITY HALL IS OPEN FROM 8:30 A.M UNTIL 4:30 P.M. MONDAY THROUGH WEDNESDAY, 8:30 A.M. UNTIL 7:30 P.M. ON THURSDAYS, AND 8:30 A.M. UNTIL 12:30 P.M. ON FRIDAYS.

**Please review and return with your sealed bids as sent. Also, ensure that all forms are completed and that your bid response is submitted as requested.
Your cooperation is greatly appreciated.**

PART 1, SECTION 2:

INSTRUCTIONS TO BIDDERS

(Chapter 30:39M or 30B:5 – Construction- Competitive Sealed Bids)

1. NAME OF PROJECT

Milk Row Cemetery – TOMB FAÇADE REHABILITATION

2. AWARDING AUTHORITY

The City of Somerville (City), acting by and through the Purchasing Department, invites sealed bids for the Milk Row Cemetery, in accordance with contract documents.

OSPCD Contact:

Brandon Wilson, Executive Director
Somerville Historic Preservation Commission
Office of Strategic Planning & Community Development
93 Highland Avenue
Somerville, MA 02143
Phone: (617) 625-6600 x2532
Fax: (617) 625-0722

3. LANDSCAPE ARCHITECT:

Walker-Kluesing Design Group
711 Ketch Drive
Naples, FL 34103

Contact: Victor Walker
vwinfl@gmail.com

4. LOCATION OF PROJECT

Milk Row Cemetery is located at 439 Somerville Ave, Somerville, MA 02143 in the Union Square neighborhood.

5. BRIEF DESCRIPTION OF WORK MORE PARTICULARLY DESCRIBED IN THE PLANS AND SPECIFICATIONS INCLUDED AS PART OF THIS BID PACKAGE.

Milk Row Cemetery is the City's oldest burial grounds (1804) located on the periphery of Union Square in Somerville, MA. The very compact site lies along Somerville Avenue, next to DeMoulas Market Basket and its parking lot, and adjoining several eligible historic buildings. The Cemetery itself is designated as a Local Historic District and is listed on both the State and National Register of Historic Places. On-street parking is limited, with commercial permits and meters available, and a minimal amount on site. Work on this project is scheduled to begin on April 15, 2016 and be completed by June 15, 2016. This project is funded in part through a State grant with very tight end of fiscal year deadlines.

The City's Office of Strategic Planning and Community Development (OSPCD) is responsible for project management, and will also interact with the General Contractor during construction.

Milk Row Cemetery

The Milk Row Cemetery Tomb Façade Rehabilitation Project consists of site work for the renovation and rehabilitation of a portion of an existing historic burial ground in Somerville, Massachusetts. Generally, the work will consist of:

1. Site preparation including the removal of paving, vegetation and miscellaneous items; and salvage and relocation of various items;
2. Earthwork including stripping topsoil, providing fill, excavation and backfilling, compaction, and grading;
3. Installation of bituminous concrete paving and various other items;
4. Rehabilitation of tomb façade; and
5. Installation and maintenance of lawns.

Contractor will be responsible for providing as-built drawings and a maintenance manual at final completion. The City will not assume maintenance of Milk Row Cemetery until final completion and a site walk-through/review meeting with the Somerville Department of Public Works at which all systems and maintenance plans will be reviewed and approved by the Somerville Department of Public Works. After this approval, the contractor will submit the maintenance manual and as-built drawings to the City.

6. ESTIMATED CONSTRUCTION COST OF THE PROJECT

The estimated cost for the project is \$ 100,000.00

7. PROJECT SCHEDULE:

Estimated Construction Start: April 15th, 2016

Date of Substantial Completion: June 15th, 2016

Date of Final Completion: June 30th, 2016

100% completion of all work.

Bidders are instructed to note the firmness of the dates of: Substantial Completion, and Final Completion. For the purpose of meeting these deadlines, the City may be prepared to authorize extended work hours beyond those prescribed by City ordinance, to include work on Sundays with the prior permission of the City.

Contractor submission of all paperwork required for the Construction Contract, including but not limited to insurance certificates, performance and payment bonds, a certificate of good standing from the Secretary of Corporations, and signature pages shall be submitted to the Purchasing Director no later than 5 working days from award of the contract.

The successful bidder shall be required to submit a preliminary construction schedule within 10 days of the established date of award of the Contract and a more detailed Gantt-type construction schedule within 15 days of the established award of the contract, which shows the dates of substantial and final completion.

As the work is scheduled to start on April 15, 2016, the City is requesting that the Contractor be mobilized as soon as possible after the contract is awarded and any materials should be ordered as soon as possible, after contract execution, to prevent delays.

8. GOVERNING LAW

Massachusetts General Laws, c. 30, §39M.

9. SALES TAX EXEMPTION

Materials, equipment, and supplies for this project are exempt from sales tax in accordance with M.G.L. Chapter 64H, Section 6 (d). The city will furnish the successful bidder with its sales tax exemption number.

10. PERMIT FEES (Contractor responsible obtaining permits/City of Somerville permit fees waived)

DPW permits to obstruct or excavate the public streets and/or sidewalks; ISD building code permits; and Traffic and Parking permits; are waived by the City of Somerville. However, license fees are not waived by the City of Somerville. The Contractor shall pay all license fees (e.g., drain layer's license fee). The City of Somerville Traffic and Parking Department must be contacted directly for all required permits.

If water usage is required in the commitment of this project, the Contractor needs to contact the DPW Water Dept., and make arrangements for a water meter. There will be a charge for the water meter and the water usage.

The Contractor is responsible for obtaining NSTAR work orders and for all costs and fees associated with NSTAR.

Permits to excavate the public way cannot be issued until the applicant has notified the appropriate utility companies, as required by Massachusetts General Laws, Chapter 370 of the Acts of 1963. The applicant must either: 1) obtain written receipts from the affected utilities, and provide copies of same to the owner; or 2) utilize the Dig-Safe System for the required notifications, and also submit written notifications for those utilities not participating in the Dig-Safe System. Written notifications must state that utility companies have been notified and the contractor cleared to begin work.

The following utility companies must be notified in writing:

M.B.T.A. Engineering and Maintenance Division 617-722-5454
Attn: Mr. William Bregoli, Chief Engineer
500 Arborway
Jamaica Plain, MA 02130

M.W.R.A. Sewer Division 617-242-6000
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

M.W.R.A. Water Division 617-242-6000
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

The following utility companies must be notified in writing or through Dig-Safe;

Algonquin Gas Transmission Corp. 617-254-4050
Attn: Mr. James Grasso
Manager of Land and Public Relations
1284 Soldiers Field Road
Brighton, MA 02135

Verizon 781-290-5154
Attn: Mr. Jim Warren
460 Totten Pond Road
Waltham, MA 02154

Boston Edison 617-541-5730
Attn: Mr. William Lemos
Right of Way
1165 Massachusetts Avenue
Dorchester, MA 02125

Boston Gas Company 617-323-9210
Attn: Mr. Dennis Peri

201 Rivermoor Street
West Roxbury, MA 02132

N-Star Electric
Attn: Mr. Wendell Berthelson
46 Blackstone Street
Somerville, MA 02139

617-497-1236, x4195

N-Star Steam
Attn: Mr. Thomas Connelly
Supervisor of Maintenance
265 First Street
Somerville, MA 02142

617-225-4568

N-Star Gas
Attn: Mr. Steve Richmond
303 Third Street
Somerville, MA 02142

617-369-5591

A T & T Broadband
Attn: Mr. Rich Ferrucci
760 Main Street
Malden, MA 01887

981-658-0400, x2210

Somerville Public Works Department
One Franey Road
Somerville, MA 02145

617-625-6600, x5200

Somerville Fire Department
266 Broadway
Somerville, MA 02143

617-625-6600, x8100

Dig-Safe

1-800-322-4844

The contractor shall have all utilities marked out along the course of this work by such means as the Engineer shall approve and shall preserve such marked locations until the work has progressed to the point where the encountered utility is fully exposed and protected as required. It shall be the contractor's responsibility to notify utilities at least 48 hours prior to the start of any excavation.

The contractor is responsible for contacting any other utilities that are not listed herein.

11. MINIMUM BID CRITERIA

- All bidders must have been conducting historic masonry rehabilitation business for a minimum of five (5) years.

12. QUESTIONS AND INFORMATION

All questions regarding the project and this Invitation to Bid should be in writing, submitted to Michael Richards, Procurement Analyst, Purchasing Department, Somerville City Hall, First Floor, 93 Highland Avenue, Somerville, Massachusetts, 02143. Questions may be submitted either by mail or email to mrichards@somervillema.gov. Questions must be submitted in writing **by 12:00 pm, Tuesday March 8th, 2016**; they will be answered in writing (via addendum) to all holders of the bid proposals. Bidders must submit e-mail address (preferred) or a fax number with their inquiries. If any bidders contact any other person or department outside of Purchasing with inquiries, they may be disqualified from the bidding process.

Key Dates

Optional Pre-Bid Site Visit at Milk Row Cemetery (on-site, pending no inclement weather)	11:00 AM	Tuesday March 1 st , 2016
Deadline for Questions	12:00 PM	Tuesday March 8 th , 2016
Proposals Due and Bids Opened	11:00 AM	Tuesday March 15 th , 2016
Anticipated Contract Award		Tuesday March 22 nd , 2016
Anticipated Notice to Proceed		Thursday, April 14, 2016
Commencement of Work		Friday, April 15, 2016

13. BID SUBMISSION TIME AND PLACE OF BID OPENING

Sealed bids (clearly identified as a bid and endorsed with the name and address of the bidder) must be received at the Purchasing Department, First floor, City Hall, 93 Highland Avenue, Somerville, MA, 02143 on or before **11:00 AM on Tuesday March 15th, 2016**, at which time they will be publicly opened and read aloud. In the event City Hall is closed, the deadline shall be 11:30 a.m. on the next day City Hall is open for business.

ADDITIONAL REQUIREMENTS: PLEASE READ CAREFULLY, FAILURE TO MEET THESE REQUIREMENTS COULD RESULT IN REJECTION OF A BID.

14. BID SUBMISSION REQUIREMENTS

Bid Signature

A bid must be signed as follows: 1) if the bidder is an individual, by her/him personally; 2) if the bidder is a partnership, by the name of the partnership, followed by the signature of each general partner; and 3) if the bidder is a corporation, by the authorized officer, whose signature must be a person named on the Corporate Secretary's Certificate of Authority.

Changes and Addenda

If any changes are made to this IFB, an addendum will be issued. Addenda will be emailed to all bidders on record as having picked up the IFB. No changes may be made to the bid documents, except as authorized in an addendum from the Purchasing Department.

Modification or Withdrawal of Bids, Mistakes, and Minor Informalities

A bidder may correct, modify, or withdraw a bid by written notice received by the City of Somerville prior to the time and date set for the bid opening. Bid modifications must be submitted in a sealed envelope clearly labeled "Modification No.____" to the address listed in part one of this section. Each modification must be numbered in sequence, and must reference the original IFB.

After the bid opening, a bidder may not change any provision of the bid in a manner prejudicial to the interests of the City or fair competition. Minor informalities will be waived or the bidder will be allowed to correct them. If a mistake and the intended correct bid are clearly evident on the face of the bid document, the mistake will be corrected to reflect the intended correct bid, and the bidder will be notified in writing; the bidder may not withdraw the bid. A bidder may withdraw a bid if a mistake is clearly evident on the face of the bid document, but the intended correct bid is not similarly evident.

Right to Cancel/Reject Bids

The City of Somerville may cancel this IFB, or reject any and all bids, if the City determines that cancellation serves the best interests of the City; or that such rejection of bids is in the public interest.

Bid Prices to Remain Firm

All bid prices submitted in response to this IFB must remain firm for 60 days following the bid opening.

Unbalanced Bids

The City reserves the right to reject unbalanced, front loaded, and conditional bids.

Documents to be Submitted as part of Bid

The following documents must be submitted with the complete signed bid package:

Form for General Bid (Section 00300)

Milk Row Cemetery Tomb Façade Rehabilitation

00200 - 7

Bid Form for Alternates (Section 00310)

Somerville Living Wage Form (Section 00320)

Acknowledgement of Notice to Bidders (Section 00330)

Quality Requirements Form (Section 00335)

Certificate of Non-Collusion and Tax Compliance (Section 00340)

Certificate of Signature Authority (Section 00350)

Signature Form (Section 00360)

Reference Form (Section 00370)

Bid bond (Section 00380)

Wage Compliance Form (Section 00385)

Schedule of Values. Bidders do NOT need to include a Schedule of Values with their bid package. The successful bidder will be required to submit a refined and detailed schedule of values for review and approval by the design professional prior to signing the construction contract.

5% Statutory Bid Guaranty and 50% Bid Bond. All bids shall be accompanied by a bid bond or bank certified check or bank treasurer's check in the amount of 5% of the bid price, which shall become the property of the City of Somerville if the bid is accepted and the bidder neglects or refuses to comply with the terms of the bid, and a payment bond in the amount of 50% of the bid price.

For successful bidder: Certificate of Good Standing: If the bidder is a corporation, a Certificate of Good Standing should accompany the signed contract. Certificate available online at: http://corp.sec.state.ma.us/corp/Certificates/Certificate_Request.asp or call Tel: (617) 727-9640 for more information.

15. PREVAILING WAGE RATE REQUIREMENTS

The contractor shall pay the Mass. Prevailing Wage Rates. The applicable prevailing wage rates are attached as part of this bid package and will be included as Appendix J in the contract. A signed Compliance Form must be included with the bid package, Form included.

- (a) The Contractor shall pay wages at no less than the Mass. Prevailing Wage Rates set forth in Appendix J. Notwithstanding anything to the contrary, the City may, in its sole discretion withhold payment unless the City has in its possession payroll records that are complete,

accurate, and current as of the date of said application for payment.

- (b) The Contractor shall:
 - (1) Pay wages at least once a week;
 - (2) Submit payroll information on a weekly basis in a format approved by the City, numbered in numerical sequence and signed by the Contractor (including forms for weeks when the Contractor is not on the Project Site, in which case there shall be a notation to the effect "no work this payroll period" and a date anticipated for resuming work).
- (c) The Contractor shall submit to the City within the first week of construction:
 - (1) A list of apprenticeship programs with which the Contractor is affiliated;
 - (2) The number of apprentices that will be employed by the Contractor on the Project;
 - (3) A list of the Contractor's employee fringe benefits;
 - (4) A copy of each project schedule, including the anticipated commencement date for each Subcontractor; and
 - (5) A list of each Subcontractor's suppliers and material men.
- (d) The Contractor shall include language similar to the above in all subcontracts.

16. SAMPLE CONSTRUCTION CONTRACT

The successful bidder shall execute with the City of Somerville a Public Works Contract ("Contract") in substantially the same form as the sample contract included in this bid package. In addition to the items submitted with the bid, the contract includes certain other documents which may be executed by the Bidder selected as contractor and which are included as Appendices to the Sample Construction Contract (see Part 2) include:

Appendix F: Certificate of Authority (for corporations if the contract is signed by anyone other than the President, there must be a current Certificate of Vote signed by the corporate clerk or secretary stating who is authorized to sign contracts on the Corporations behalf)

Appendix D: Insurance Certificates— evidencing minimum coverage as follows:

General Liability - \$2,000,000 per occurrence, \$2,000,000 aggregate

Automobile Liability: \$1,000,000 per occurrence, \$1,000,000 aggregate

Workman's Compensation: statutory coverage

Certificates must stipulate "City of Somerville" as a certificate holder and as an additional insured for general liability.

Appendix F: Certificate of Good Standing: Certificate available online at http://corp.sec.state.ma.us/corp/Certificates/Certificate_Request.asp or call Tel: (617) 727-9640 for more information.

Appendix H: Statement of Management (for contracts over \$100,000.00)

Appendix I: Performance and Payment Bonds for 100% of the contract sum

All paperwork required for the contract shall be completed and delivered to the Purchasing Department no later than five (5) working days after the Award of the Contract.

ITEMS OF SPECIAL CONSIDERATION

The Contractor's attention is specifically drawn to the following items of special consideration relative to this project, most of which are also addressed in the Technical Specifications.

- a. The Contractor must provide police details at the Contractor's expense.
- b. All new Handicapped Accessible ramps must meet the most current state ADA and City of Somerville standards.
- c. The Contractor must obtain all street and sidewalk permits as necessary.

19. RESERVATION OF RIGHTS

The City reserves the right to extend the deadline for submission of bids, to waive minor informalities, and to reject any and all bids, if in its sole judgment, the best interests of the City of Somerville would be served by doing so.

20. RULE FOR AWARD

A contract will be awarded to the lowest responsible and eligible bidder. All required bid documents must be provided to be deemed responsible and eligible.

21. MAINTENANCE MANUAL AND AS-BUILT DRAWING REQUIREMENTS

Upon Final Completion of all park construction, the contractor shall submit: two complete copies of a park maintenance manual, and two copies of an as-built drawing set, with two digital copies of the as-built drawings on compact disc (CD) or thumb drive.

The City will not issue the final check for park retainage until the submittal and approval of the maintenance manual and as-built drawings.

- 1) The Maintenance Manual shall be in the form of a three ring binder, organized and tabbed into appropriate sections, and shall include the following items:
 - A complete landscape maintenance plan with recommended maintenance schedules and procedures for all park systems including: watering, fertilization, spring start up procedures, fall clean-up, irrigation and water systems shut-down procedures, and park winterization procedures;
 - A letter from the contractor stating the period of warranty for all parts, materials, and workmanship, from the date of Final Completion;
 - A letter from the contractor stating the period of warranty for the irrigation system;
 - All product information, product directions, and warranties;
 - List of all plant material, and sizes of plant containers;

Milk Row Cemetery Tomb Façade Rehabilitation

- Copies of City permits with signatures of inspectors;
 - Contact information for all subcontractors including email addresses; and,
 - A record of all submittals and dates of approvals.
- 2) As-Built drawing shall be a complete and accurate record that incorporate any and all changes to the construction plan set issued at the time of contract initiation. As-built drawings shall be clearly marked and annotated and shall include but not be limited to: all field changes, change orders, and supplemental drawing provided by the landscape architect.
- 3) The Compact Discs shall include an electronic copy of all as-built drawings.

PART 1 SECTION 3

Milk Row Cemetery Tomb Façade Rehabilitation (IFB # 16-69)

BID SUBMISSION DOCUMENTS

BIDDERS NAME: _____

This Bid Submission includes the following:

- _____ Form for General Bid
- _____ Bid Form for Alternates
- _____ Somerville Living Wage Form
- _____ Acknowledgement of Notice to Bidders
- _____ Quality Requirements
- _____ Certificate of Non-Collusion and Tax Compliance
- _____ Certificate of Signature Authority
- _____ OSHA Training Compliance Form
- _____ Signature Form
- _____ Reference Form
- _____ 5% Statutory Bid Bond or Guaranty
- _____ 50% Payment Bond
- _____ Wage Rate Compliance Forms

FORM FOR GENERAL BID
FOR PUBLIC WORKS CONSTRUCTION CONTRACT

(page 1 of 6)

To the City of Somerville:

- A. The Undersigned Bidder proposes to furnish all labor and materials required for the: Milk Row Cemetery Tomb Facade Rehabilitation ("Project") in accordance with the accompanying plans and specifications dated February 18, 2016 prepared by Walker Kluesing Design Group.

For the contract price specified below, subject to additions and deductions according to the terms of the specifications.

- B. This bid includes addenda numbered _____.

- C. The proposed contract price is:

(total bid in words)

\$ _____
(total bid in figures)

- D. If there is attached a "Bid Form for Alternates," the Undersigned shall fill in prices for each alternate. All blank spaces must be filled in. The omission of any item will result in the rejection of a bid. The price of each alternate shall include its pro rata share of overhead and profit.
- E. In the event work additional to the plans and specifications dated February 18, 2016 is required, or quantities of certain classes of work are increased or decreased from those on which the contract price is based, the undersigned agrees to use supplemental unit prices, if any, included with this bid package as the basis for payment to the undersigned or as credit to the City of Somerville for such additions or deletions to the work. Supplemental unit prices cover all costs, complete in place. Such prices represent the exact amount per unit to be paid to the "Contractor" or to be refunded to the City of Somerville and shall not include overhead, profit, insurance or other direct or indirect expenses of the "Contractor."

FORM FOR GENERAL BID

(page 2 of 6)

- F. The Undersigned agrees that, if it is selected as general contractor it will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the City of Somerville, execute a contract in accordance with the terms of this bid and furnish a performance bond of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the City of Somerville and in the sum of the contract price, the premiums for which are to be paid by the Undersigned and are included in the contract price.
- G. The Undersigned Bidder hereby certifies that it is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Project and that it will comply fully with all laws and regulations applicable to this award.
- H. The Undersigned Bidder further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the work "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.
- I. The Undersigned Bidder agrees to comply with federal and state equal opportunity and labor requirements and special labor conditions set forth in respect to Section 3 of the HUD Act of 1968, if applicable. (NA)
- J. The Undersigned does ____ does not ____ anticipate that it will be hiring new employees during the term of this contract.
- K. The Undersigned certifies that it is a (Sole Proprietorship, General Partnership, Limited Partnership, Corporation, Trust, Joint Venture) _____, that its Federal Employer Identification Number (EIN) is # _____, and that the undersigned certifies under penalty of perjury pursuant to M.G.L. c 62C, Section 49A, that the Undersigned has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support and federal and municipal laws relating to taxes it is in compliance with all federal, state, and local laws regarding taxation, and that:
- 1) if a Sole Proprietorship, it conducts business under the name _____, and that a D/B/A Certificate has been filed with the Clerk of the City of Somerville, and that the residential address of the sole proprietor is _____, and that the Undersigned has been conducting business under that name for _____ years.

FORM FOR GENERAL BID

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- 2) if a General Partnership, then name of the General Partnership is _____,
the General partnership has been doing business under that name for _____ years,
and the names and residential addresses of the General Partners are:

- 3) if a Limited Partnership, the name of the Limited partnership is _____,
the Limited Partnership has been doing business under that name for _____ years, the
names and residential addresses of the General Partners of the Limited Partnership are:

and, a Certificate of Limited Partnership (obtainable from the Secretary of the
Commonwealth) shall be provided.

- 4) If a Corporation, the Bidder is incorporated in the State of _____, the
name of the Corporation is _____, the Corporation has been doing
business under that name for _____ years, the names and residential addresses of its
officers are

President: _____

Treasurer: _____

Clerk: _____

and a current Certificate of Good Standing, (obtainable from the Secretary of the
Commonwealth for Massachusetts corporations and non-Massachusetts
corporations which are properly registered as foreign corporations doing business
in the Commonwealth), shall be provided.

- 5) If a Joint Venture, the name of the Joint Venture is: _____
_____ ; the Joint Venture has been operating
under that name for _____ years; the names and business addresses of the Joint
Venturers are _____
and _____ :
and that a copy of the joint venture agreement shall be provided.

FORM FOR GENERAL BID

(page 4 of 6)

- L. The Undersigned certifies under penalties of perjury that the Undersigned is not presently debarred from doing federal or state public construction work, that the Undersigned has not had its low bid rejected by any municipality in the previous two years, except , in which case the reasons for rejection were as follows:
-

- M. The Undersigned certifies that the following two historic masonry projects were completed during the previous five years and may be contacted by the City of Somerville as references.

<u>Name of Town & Project & Type of Project</u>	<u>\$ Amount</u>	<u>Name & Tel. No. of Contact</u>
---	------------------	---------------------------------------

1) _____

2) _____

- N. Undersigned Bidder and its subcontractors agree to pay prevailing wages to laborers and mechanics at the federal or state rates included with the bid package, and if the Undersigned's bid is significantly below the average bid, the Undersigned agrees to substantiate that the bid is based on payment of wages at such prevailing rates.
- O. The undersigned shall comply with the Living Wage ordinance Sec. 2-392, Division 3 of the Somerville Code of Ordinances, which currently requires payment of a minimum wage of \$12.24 per hour to all employees paid under this contract.

FORM FOR GENERAL BID

(page 5 of 6)

Executed this _____ day of _____ 201____ on behalf of :

(Undersigned Bidder Name)

(Business Address)

(Telephone)

(Fax)

(E-mail)

Signature: _____

(Name and Address of Person Signing Bid)

(Title of Person Signing Bid)

FORM FOR GENERAL BID

(Page 6 of 6)

BID FORM FOR ALTERNATES
(See Specifications Section 01 23 00)

ADD ALTERNATE NO. 1: DEDUCT WORK ASSOCIATED WITH TOMB NO. 1

Price: _____

ADD ALTERNATE NO. 2 DEDUCT WORK ASSOCIATED WITH TOMB NO. 2

Price: _____



SOMERVILLE LIVING WAGE ORDINANCE CERTIFICATION FORM
CITY OF SOMERVILLE CODE OF ORDINANCES SECTION 2-397 et seq.*

Instructions: This form shall be included in all Invitations for Bids and Requests for Proposals which involve the furnishing of labor, time or effort (with no end product other than reports) by vendors contracting or subcontracting with the City of Somerville, where the contract price meets or exceeds the following dollar threshold: \$10,000. If the undersigned is selected, this form will be attached to the contract or subcontract and the certifications made herein shall be incorporated as part of such contract or subcontract. **Complete this form and sign and date where indicated below on page 2.**

Purpose: The purpose of this form is to ensure that such vendors pay a “Living Wage” (defined below) to all covered employees (i.e., all employees except individuals in a city, state or federally funded youth program). In the case of bids, the City will award the contract to the lowest responsive and responsible bidder paying a Living Wage. In the case of RFP’s, the City will select the most advantageous proposal from a responsive and responsible offeror paying a Living Wage. In neither case, however, shall the City be under any obligation to select a bid or proposal that exceeds the funds available for the contract.

Definition of “Living Wage”: For this contract or subcontract, as of 7/1/2015 “Living Wage” shall be deemed to be an hourly wage of no less than \$12.24 per hour. From time to time, the Living Wage may be upwardly adjusted and amendments, if any, to the contract or subcontract may require the payment of a higher hourly rate if a higher rate is then in effect.

CERTIFICATIONS

1. The undersigned shall pay no less than the Living Wage to all covered employees who directly expend their time on the contract or subcontract with the City of Somerville.
2. The undersigned shall post a notice, (copy enclosed), to be furnished by the contracting City Department, informing covered employees of the protections and obligations provided for in the Somerville Living Wage Ordinance, and that for assistance and information, including copies of the Ordinance, employees should contact the contracting City Department. Such notice shall be posted in each location where services are performed by covered employees, in a conspicuous place where notices to employees are customarily posted.
3. The undersigned shall maintain payrolls for all covered employees and basic records relating hereto and shall preserve them for a period of three years. The records shall contain the name and address of each employee, the number of hours worked, the gross wages, a copy of the social

* Copies of the Ordinance are available upon request to the Purchasing Department.

Form:____
Contract Number:_____

CITY OF SOMERVILLE

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security returns, and evidence of payment thereof and such other data as may be required by the contracting City Department from time to time.

4. The undersigned shall submit payroll records to the City upon request and, if the City receives information of possible noncompliance with the provisions the Somerville Living Wage Ordinance, the undersigned shall permit City representatives to observe work being performed at the work site, to interview employees, and to examine the books and records relating to the payrolls being investigated to determine payment of wages.

5. The undersigned shall not fund wage increases required by the Somerville Living Wage Ordinance by reducing the health insurance benefits of any of its employees.

6. The undersigned agrees that the penalties and relief set forth in the Somerville Living Wage Ordinance shall be in addition to the rights and remedies set forth in the contract and/or subcontract.

CERTIFIED BY:

Signature: _____
(Duly Authorized Representative of Vendor)

Title: _____

Name of Vendor:_____

Date: _____

INSTRUCTIONS: PLEASE POST

**NOTICE TO ALL EMPLOYEES
REGARDING PAYMENT OF LIVING WAGE**

Under the Somerville, Massachusetts' Living Wage Ordinance (Ordinance No. 1999-1), any person or entity who has entered into a contract with the City of Somerville is required to pay its employees who are involved in providing services to the City of Somerville no less than a "Living Wage".

The Living Wage as of **7/1/2015** is **\$12.24** per hour. The only employees who are not covered by the Living Wage Ordinance are individuals in a Youth Program. "Youth Program" as defined in the Ordinance, "means any city, state or federally funded program which employs youth, as defined by city, state or federal guidelines, during the summer, or as part of a school to work program, or in any other related seasonal or part-time program."

For assistance and information regarding the protections and obligations provided for in the Living Wage Ordinance and/or a copy of the Living Wage Ordinance, all employees should contact the City of Somerville's Purchasing Department directly.

Part 1 Section 3: BID SUBMISSION DOCUMENTS

NOTICE TO BIDDERS BID #16-69

All bids must be in accordance with terms and conditions set forth herein as stated.

- SECTION A. Sealed bids for: **Milk Row Cemetery**. The bids will be received at the office of the Purchasing Director, Somerville City Hall, 93 Highland Avenue, Somerville, MA. 02143 no later than **Tuesday, March 15th, 2016 at 11:00 A.M.** at which time and place they will be publicly opened and read.
- SECTION B. Forms of price bid, specifications and terms of contract can be obtained at the Purchasing Department office on or after **Wednesday, February 24th, 2016.**
- SECTION C. Bid envelopes shall be clearly marked as follows: **"Bid No: 16-69, Bid for Milk Row Cemetery"**.
- SECTION D. If **awarded** vendor is a Corporation, vendor must comply with request for "Certificate of Good Standing". See attached instructions.
- SECTION E. **INSURANCE: Awarded Vendor** must comply with insurance requirements as stated in the bid package.
- SECTION F. Living Wage - see Somerville Living Wage Form (00320)
Prevailing Wage Rates – and Compliance Form
- SECTION G. The requirements in Section **E or F** will be waived if the words "Non-Applicable" (N/A) are inserted in the space designated.
- SECTION H. The copy of the bid deposited with the City will be accompanied by a bid guarantee in the amount of 5% of the proposed bid amount. A Bid bond, Certified Check, Treasurer's Check, or Cashier's Check made payable to the City must be submitted with each bid. Said bid guarantee will become the property of the City of Somerville if the proposal is accepted and the bidder either neglects or refuses to comply with the terms of the proposal. Bid guarantee will be returned within 30 days to all unsuccessful bidders.
- SECTION I. A Payment Bond in the amount of 50% of the total contract price will be required by the City.
- SECTION J. The Purchasing Director reserves the right to accept or reject any or all bids, to waive any minor informalities, if in her sole judgment, the best interest of the City of Somerville would be served by so doing.
- SECTION K. The City reserves the right to cancel a contract, if awarded bidder does not respond to all necessary documents and required signature forms within ten (10) working days of receipt of contract.

Part 1 Section 3: BID SUBMISSION DOCUMENTS

SECTION L.

The Vendor must certify that all employees to be provided have successfully completed at least ten (10) hours of OSHA approved training in Construction Safety and Health.

Signature: _____

Company: _____

By: _____ Title: _____

Date: _____ Tel. No: _____ Fax: _____

Applicable to Corporations:

I hereby attest that the signatory to this bid has the authority to sign and submit bids for the Corporation.

ATTEST: _____
Secretary

Part 1, Section 3: BID SUBMISSION DOCUMENTS

QUALITY REQUIREMENTS FORM

Please respond to the following questions. A negative response to any of the first four questions will automatically disqualify the Bidder. A negative response to the fifth question about SOMWBA will not disqualify the Bidder.

	Yes	No
Has the contractor been established in historic masonry rehabilitation for at least 5 years?		
Can the contractor certify that all employees to be provided, have successfully completed at least 10 hours of OSHA approved training in Construction Safety and Health?		
Optional: Vendor: Are you a State Office for Minority and Women Owned Business Assistance (SOMWBA) certified minority- or woman-owned business?		

Form:_____
Contract Number:_____

CITY OF SOMERVILLE

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Non-Collusion Form and Tax Compliance Certification

Instructions: Complete each part of this two-part form and sign and date where indicated below.

A. NON-COLLUSION FORM

I, the undersigned, hereby certify under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person.

As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Signature: _____
(Individual Submitted Bid or Proposal)
Duly Authorized

Name of Business or Entity: _____

Date: _____

B. TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, §49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support, as well as paid all contributions and payments in lieu of contributions pursuant to MGL 151A, §19A(b).

Signature: _____
(Duly Authorized Representative of Vendor)

Name of Business or Entity: _____

Social Security Number or Federal Tax ID#: _____

Date: _____



Certificate of Authority (Corporations Only)

Instructions: Complete this form and sign and date where indicated below.

1. I hereby certify that I, the undersigned, am the duly elected Clerk/Secretary of

(Insert Full Name of Corporation)

2. I hereby certify that the following individual _____
(Insert the Name of Officer who Signed the Contract and Bonds)

is the duly elected _____ of said Corporation.
(Insert the Title of the Officer in Line 2)

3. I hereby certify that on _____
(Insert Date: Must be on or before Date Officer Signed Contract/Bonds)

at a duly authorized meeting of the Board of Directors of said corporation, at which a quorum was present, it was voted that

(Insert Name of Officer from Line 2) (Insert Title of Officer from Line 2)

of this corporation be and hereby is authorized to make, enter into, execute, and deliver contracts and bonds in the name and on behalf of said corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this corporation's name and on its behalf, with or without the Corporate Seal, shall be valid and binding upon this corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

4. **ATTEST:**

Signature: _____
(Clerk or Secretary)

AFFIX CORPORATE SEAL HERE

Printed Name: _____

Printed Title: _____

Date: _____
(Date Must Be on or after Date Officer Signed Contract/Bonds)



Certificate of Authority (Limited Liability Companies Only)

Instructions: Complete this form and sign and date where indicated below.

1. I, the undersigned, being a member or manager of

_____,
(Complete Name of Limited Liability Company)

a limited liability company (LLC) hereby certify as to the contents of this form for the purpose of contracting with the City of Somerville.

2. The LLC is organized under the laws of the state of: _____.

3. The LLC is managed by (**check one**) a Manager or by its Members.

4. I hereby certify that each of the following individual(s) is:

- a member/manager of the LLC;
- duly authorized to execute and deliver this contract, agreement, and/or other legally binding documents relating to any contract and/or agreement on behalf of the LLC;
- duly authorized to do and perform all acts and things necessary or appropriate to carry out the terms of this contract or agreement on behalf of the LLC; and
- that no resolution, vote, or other document or action is necessary to establish such authority.

<u>Name</u>	<u>Title</u>

5. **Signature:**_____

Printed Name: _____

Printed Title:_____

Date: _____

Form:_____
Contract Number:_____

CITY OF SOMERVILLE

Rev. 11/14/2014



OSHA GENERAL CONTRACTOR CERTIFICATION FORM

**Pursuant to Chapter 306 of the Acts of 2004
An Act Relative to the Health and Safety on Construction Projects**

GENERAL CONTRACTOR'S CERTIFICATION – BID FORM

I, the undersigned, hereby certify under penalties of perjury that I, and all subcontractors who are not filed sub-bidders, shall:

(1) that I am able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Signature: _____
(Individual Submitting Bid)
Duly Authorized

Name of Business or Entity: _____

Date: _____

RETURN THIS FORM WITH YOUR BID

Part 1, Section 3: BID SUBMISSION DOCUMENTS

CITY OF SOMERVILLE

SIGNATURE FORM

NAME OF COMPANY: _____

ADDRESS: _____

TELEPHONE #: _____ FAX #: _____

DATE: _____ EMAIL: _____

SIGNATURE OF AUTHORIZED CONTRACTING OFFICIAL:

TITLE: _____

RESIDENCE: _____

IF COMPANY IS A PARTNERSHIP:

FULL NAME AND RESIDENCE OF EACH PARTNER:

IF COMPANY IS A CORPORATION:

THE CORPORATE NAME IS: _____

THE CORPORATION IS ORGANIZED UNDER THE LAWS OF: _____

THE PRESIDENT IS: _____

THE TREASURER IS: _____

THE CLERK/SECRETARY OR ASSISTANT CLERK/SECRETARY WHO WILL EXECUTE THE
CONTRACT AND SIGN THE CERTIFICATE OF AUTHORITY IS:

NAME OF CORPORATION THAT WILL APPEAR ON A POTENTIAL CONTRACTUAL
AGREEMENT IF DIFFERENT FROM ABOVE: _____.

NAME AND TITLE OF PERSON WHO WILL BE THE PRINCIPAL SIGNATORY ON THE
CONTRACT IF OTHER THAN THE PRESIDENT:

NAME: _____ TITLE: _____

Part 1, Section 3: BID SUBMISSION DOCUMENTS

REFERENCE FORM

Bidder: _____

IFB Title: **IFB# 16-69 Milk Row Cemetery**

Bidder must provide references from three municipalities for similar historic masonry rehabilitation projects completed during the previous six (6) years.

Reference: _____ Contact: _____

Address: _____ Phone: _____

_____ Fax: _____

Description and date(s) of supplies or services provided: _____

Reference: _____ Contact: _____

Address: _____ Phone: _____

_____ Fax: _____

Description and date(s) of supplies or services provided: _____

Reference: _____ Contact: _____

Address: _____ Phone: _____

_____ Fax: _____

Description and date(s) of supplies or services provided: _____

Part 1, Section 3: BID SUBMISSION DOCUMENTS

**BID BOND OR GUARANTY
PAYMENT BOND**

BIDDER TO INSERT HERE

**Prevailing Wage Rates
Payroll Submission Forms**



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

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

RONALD L. WALKER, II
Secretary

WILLIAM D MCKINNEY
Director

Awarding Authority: City of Somerville

Contract Number:

City/Town: SOMERVILLE

Description of Work: Rehabilitation of the Milk Row Cemetery. The project consists of site work for the renovation and rehabilitation of a portion of an existing historic cemetery facade.

Job Location: 439 Somerville Ave, Somerville, MA 02143

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule from the Department of Labor Standards ("DLS") if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **If an apprentice rate is not listed on the prevailing wage schedule for the trade in which an apprentice is registered with the DAS, the apprentice must be paid the journeyworker's rate for the trade.**
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F "rental of equipment" contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$32.75	\$10.41	\$10.08	\$0.00	\$53.24
	06/01/2016	\$33.25	\$10.41	\$10.08	\$0.00	\$53.74
	08/01/2016	\$33.25	\$10.91	\$10.08	\$0.00	\$54.24
	12/01/2016	\$33.25	\$10.91	\$10.89	\$0.00	\$55.05
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$32.82	\$10.41	\$10.08	\$0.00	\$53.31
	06/01/2016	\$33.32	\$10.41	\$10.08	\$0.00	\$53.81
	08/01/2016	\$33.32	\$10.91	\$10.08	\$0.00	\$54.31
	12/01/2016	\$33.32	\$10.91	\$10.89	\$0.00	\$55.12
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$32.94	\$10.41	\$10.08	\$0.00	\$53.43
	06/01/2016	\$33.44	\$10.41	\$10.08	\$0.00	\$53.93
	08/01/2016	\$33.44	\$10.91	\$10.08	\$0.00	\$54.43
	12/01/2016	\$33.44	\$10.91	\$10.89	\$0.00	\$55.24
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.29	\$9.80	\$19.23	\$0.00	\$117.32
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	06/01/2016	\$36.85	\$7.45	\$13.55	\$0.00	\$57.85
	12/01/2016	\$37.85	\$7.45	\$13.55	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2015	\$34.38	\$10.40	\$5.95	\$0.00	\$50.73
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	06/01/2016	\$36.85	\$7.45	\$13.55	\$0.00	\$57.85
	12/01/2016	\$37.85	\$7.45	\$13.55	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BOILER MAKER	01/01/2016	\$41.62	\$6.97	\$16.21	\$0.00	\$64.80
BOILERMAKERS LOCAL 29	01/01/2017	\$42.92	\$6.97	\$16.21	\$0.00	\$66.10

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$27.05	\$6.97	\$10.54	\$0.00	\$44.56
2	65	\$27.05	\$6.97	\$10.54	\$0.00	\$44.56
3	70	\$29.13	\$6.97	\$11.35	\$0.00	\$47.45
4	75	\$31.22	\$6.97	\$12.16	\$0.00	\$50.35
5	80	\$33.30	\$6.97	\$12.97	\$0.00	\$53.24
6	85	\$35.38	\$6.97	\$13.78	\$0.00	\$56.13
7	90	\$37.46	\$6.97	\$14.59	\$0.00	\$59.02
8	95	\$39.54	\$6.97	\$15.40	\$0.00	\$61.91

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
2	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
3	70	\$30.04	\$6.97	\$11.35	\$0.00	\$48.36
4	75	\$32.19	\$6.97	\$12.16	\$0.00	\$51.32
5	80	\$34.34	\$6.97	\$12.97	\$0.00	\$54.28
6	85	\$36.48	\$6.97	\$13.78	\$0.00	\$57.23
7	90	\$38.63	\$6.97	\$14.59	\$0.00	\$60.19
8	95	\$40.77	\$6.97	\$15.40	\$0.00	\$63.14

Notes:

Apprentice to Journeyworker Ratio:1:5

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	02/01/2016	\$49.86	\$10.18	\$19.14	\$0.00	\$79.18
BRICKLAYERS LOCAL 3 (BOSTON)	08/01/2016	\$50.76	\$10.18	\$19.22	\$0.00	\$80.16
	02/01/2017	\$51.33	\$10.18	\$19.22	\$0.00	\$80.73

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Boston

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.93	\$10.18	\$19.14	\$0.00	\$54.25
2	60	\$29.92	\$10.18	\$19.14	\$0.00	\$59.24
3	70	\$34.90	\$10.18	\$19.14	\$0.00	\$64.22
4	80	\$39.89	\$10.18	\$19.14	\$0.00	\$69.21
5	90	\$44.87	\$10.18	\$19.14	\$0.00	\$74.19

Effective Date - 08/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.38	\$10.18	\$19.22	\$0.00	\$54.78
2	60	\$30.46	\$10.18	\$19.22	\$0.00	\$59.86
3	70	\$35.53	\$10.18	\$19.22	\$0.00	\$64.93
4	80	\$40.61	\$10.18	\$19.22	\$0.00	\$70.01
5	90	\$45.68	\$10.18	\$19.22	\$0.00	\$75.08

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN	12/01/2015	\$36.45	\$7.45	\$13.75	\$0.00	\$57.65
LABORERS - FOUNDATION AND MARINE	06/01/2016	\$37.20	\$7.45	\$13.75	\$0.00	\$58.40
	12/01/2016	\$38.20	\$7.45	\$13.75	\$0.00	\$59.40
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER	12/01/2015	\$35.30	\$7.45	\$13.75	\$0.00	\$56.50
LABORERS - FOUNDATION AND MARINE	06/01/2016	\$36.05	\$7.45	\$13.75	\$0.00	\$57.25
	12/01/2016	\$37.05	\$7.45	\$13.75	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN	12/01/2015	\$35.30	\$7.45	\$13.75	\$0.00	\$56.50
LABORERS - FOUNDATION AND MARINE	06/01/2016	\$36.05	\$7.45	\$13.75	\$0.00	\$57.25
	12/01/2016	\$37.05	\$7.45	\$13.75	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
LABORERS - ZONE 1	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
CARPENTER	03/01/2015	\$42.30	\$9.80	\$16.48	\$0.00	\$68.58
CARPENTERS -ZONE 1 (Metro Boston)						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - CARPENTER - Zone 1 Metro Boston

Effective Date - 03/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.15	\$9.80	\$1.63	\$0.00	\$32.58
2	60	\$25.38	\$9.80	\$1.63	\$0.00	\$36.81
3	70	\$29.61	\$9.80	\$11.59	\$0.00	\$51.00
4	75	\$31.73	\$9.80	\$11.59	\$0.00	\$53.12
5	80	\$33.84	\$9.80	\$13.22	\$0.00	\$56.86
6	80	\$33.84	\$9.80	\$13.22	\$0.00	\$56.86
7	90	\$38.07	\$9.80	\$14.85	\$0.00	\$62.72
8	90	\$38.07	\$9.80	\$14.85	\$0.00	\$62.72

Notes:

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (BOSTON)	01/01/2016	\$46.44	\$10.90	\$18.71	\$1.30	\$77.35
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Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Boston)

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.22	\$10.90	\$12.21	\$0.00	\$46.33
2	60	\$27.86	\$10.90	\$13.71	\$1.30	\$53.77
3	65	\$30.19	\$10.90	\$14.71	\$1.30	\$57.10
4	70	\$32.51	\$10.90	\$15.71	\$1.30	\$60.42
5	75	\$34.83	\$10.90	\$16.71	\$1.30	\$63.74
6	80	\$37.15	\$10.90	\$17.71	\$1.30	\$67.06
7	90	\$41.80	\$10.90	\$18.71	\$1.30	\$72.71

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR LABORERS - ZONE 1	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	12/01/2015	\$44.73	\$10.00	\$14.90	\$0.00	\$69.63
	06/01/2016	\$45.48	\$10.00	\$14.90	\$0.00	\$70.38
	12/01/2016	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	06/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
	12/01/2017	\$48.73	\$10.00	\$14.90	\$0.00	\$73.63

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$30.13	\$10.00	\$14.90	\$0.00	\$55.03
	06/01/2016	\$30.65	\$10.00	\$14.90	\$0.00	\$55.55
	12/01/2016	\$31.52	\$10.00	\$14.90	\$0.00	\$56.42
	06/01/2017	\$32.21	\$10.00	\$14.90	\$0.00	\$57.11
	12/01/2017	\$32.90	\$10.00	\$14.90	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 1</i>	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.76	\$7.85	\$0.00	\$0.00	\$32.61
2	55	\$27.23	\$7.85	\$3.66	\$0.00	\$38.74
3	60	\$29.71	\$7.85	\$3.99	\$0.00	\$41.55
4	65	\$32.18	\$7.85	\$4.32	\$0.00	\$44.35
5	70	\$34.66	\$7.85	\$14.11	\$0.00	\$56.62
6	75	\$37.13	\$7.85	\$14.44	\$0.00	\$59.42
7	80	\$39.61	\$7.85	\$14.77	\$0.00	\$62.23
8	90	\$44.56	\$7.85	\$15.44	\$0.00	\$67.85

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.23	\$7.85	\$0.00	\$0.00	\$33.08
2	55	\$27.75	\$7.85	\$3.66	\$0.00	\$39.26
3	60	\$30.28	\$7.85	\$3.99	\$0.00	\$42.12
4	65	\$32.80	\$7.85	\$4.32	\$0.00	\$44.97
5	70	\$35.32	\$7.85	\$14.11	\$0.00	\$57.28
6	75	\$37.85	\$7.85	\$14.44	\$0.00	\$60.14
7	80	\$40.37	\$7.85	\$14.77	\$0.00	\$62.99
8	90	\$45.41	\$7.85	\$15.44	\$0.00	\$68.70

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.50	\$7.45	\$13.55	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.50	\$7.45	\$13.55	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.25	\$7.45	\$13.55	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.50	\$7.45	\$13.55	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.25	\$7.45	\$13.55	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.50	\$7.45	\$13.55	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$58.86	\$9.80	\$19.23	\$0.00	\$87.89
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$63.06	\$9.80	\$19.23	\$0.00	\$92.09
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2015	\$88.23	\$9.80	\$19.23	\$0.00	\$117.26
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56
For apprentice rates see "Apprentice- ELECTRICIAN"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56

Classification

Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate

Apprentice - ELECTRICIAN - Local 103
Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.27	\$13.00	\$0.55	\$0.00	\$31.82
2	40	\$18.27	\$13.00	\$0.55	\$0.00	\$31.82
3	45	\$20.55	\$13.00	\$11.86	\$0.00	\$45.41
4	45	\$20.55	\$13.00	\$11.86	\$0.00	\$45.41
5	50	\$22.84	\$13.00	\$12.23	\$0.00	\$48.07
6	55	\$25.12	\$13.00	\$12.58	\$0.00	\$50.70
7	60	\$27.40	\$13.00	\$12.95	\$0.00	\$53.35
8	65	\$29.69	\$13.00	\$13.32	\$0.00	\$56.01
9	70	\$31.97	\$13.00	\$13.69	\$0.00	\$58.66
10	75	\$34.25	\$13.00	\$14.06	\$0.00	\$61.31

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.47	\$13.00	\$0.55	\$0.00	\$32.02
2	40	\$18.47	\$13.00	\$0.55	\$0.00	\$32.02
3	45	\$20.78	\$13.00	\$12.34	\$0.00	\$46.12
4	45	\$20.78	\$13.00	\$12.34	\$0.00	\$46.12
5	50	\$23.09	\$13.00	\$12.71	\$0.00	\$48.80
6	55	\$25.39	\$13.00	\$13.07	\$0.00	\$51.46
7	60	\$27.70	\$13.00	\$13.44	\$0.00	\$54.14
8	65	\$30.01	\$13.00	\$13.81	\$0.00	\$56.82
9	70	\$32.32	\$13.00	\$14.18	\$0.00	\$59.50
10	75	\$34.63	\$13.00	\$14.55	\$0.00	\$62.18

Notes :

App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR	01/01/2016	\$54.53	\$14.43	\$14.96	\$0.00	\$83.92
ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2017	\$55.86	\$15.28	\$15.71	\$0.00	\$86.85

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.27	\$14.43	\$0.00	\$0.00	\$41.70
2	55	\$29.99	\$14.43	\$14.96	\$0.00	\$59.38
3	65	\$35.44	\$14.43	\$14.96	\$0.00	\$64.83
4	70	\$38.17	\$14.43	\$14.96	\$0.00	\$67.56
5	80	\$43.62	\$14.43	\$14.96	\$0.00	\$73.01

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.93	\$15.28	\$0.00	\$0.00	\$43.21
2	55	\$30.72	\$15.28	\$15.71	\$0.00	\$61.71
3	65	\$36.31	\$15.28	\$15.71	\$0.00	\$67.30
4	70	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09
5	80	\$44.69	\$15.28	\$15.71	\$0.00	\$75.68

Notes:

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER	01/01/2016	\$38.17	\$14.43	\$14.96	\$0.00	\$67.56
ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2017	\$39.10	\$15.28	\$15.71	\$0.00	\$70.09
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"						
FENCE & GUARD RAIL ERECTOR	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
LABORERS - ZONE 1	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	11/01/2015	\$40.49	\$10.00	\$14.55	\$0.00	\$65.04
OPERATING ENGINEERS LOCAL 4	05/01/2016	\$41.38	\$10.00	\$14.55	\$0.00	\$65.93
	11/01/2016	\$41.97	\$10.00	\$14.55	\$0.00	\$66.52
	05/01/2017	\$42.85	\$10.00	\$14.55	\$0.00	\$67.40
	11/01/2017	\$43.58	\$10.00	\$14.55	\$0.00	\$68.13
	05/01/2018	\$44.29	\$10.00	\$14.55	\$0.00	\$68.84
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY	11/01/2015	\$41.93	\$10.00	\$14.55	\$0.00	\$66.48
OPERATING ENGINEERS LOCAL 4	05/01/2016	\$42.82	\$10.00	\$14.55	\$0.00	\$67.37
	11/01/2016	\$43.42	\$10.00	\$14.55	\$0.00	\$67.97
	05/01/2017	\$44.31	\$10.00	\$14.55	\$0.00	\$68.86
	11/01/2017	\$45.04	\$10.00	\$14.55	\$0.00	\$69.59
	05/01/2018	\$45.76	\$10.00	\$14.55	\$0.00	\$70.31
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2015	\$21.71	\$10.00	\$14.55	\$0.00	\$46.26
	05/01/2016	\$22.23	\$10.00	\$14.55	\$0.00	\$46.78
	11/01/2016	\$22.58	\$10.00	\$14.55	\$0.00	\$47.13
	05/01/2017	\$23.11	\$10.00	\$14.55	\$0.00	\$47.66
	11/01/2017	\$23.53	\$10.00	\$14.55	\$0.00	\$48.08
	05/01/2018	\$23.96	\$10.00	\$14.55	\$0.00	\$48.51
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	09/01/2015	\$34.25	\$13.00	\$14.06	\$0.00	\$61.31
<i>LOCAL 103</i>	03/01/2016	\$34.63	\$13.00	\$14.55	\$0.00	\$62.18
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$36.34	\$10.00	\$14.90	\$0.00	\$61.24
	06/01/2016	\$36.96	\$10.00	\$14.90	\$0.00	\$61.86
	12/01/2016	\$38.00	\$10.00	\$14.90	\$0.00	\$62.90
	06/01/2017	\$38.84	\$10.00	\$14.90	\$0.00	\$63.74
	12/01/2017	\$39.67	\$10.00	\$14.90	\$0.00	\$64.57
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 1</i>	12/01/2015	\$20.50	\$7.45	\$13.55	\$0.00	\$41.50
	06/01/2016	\$20.50	\$7.45	\$13.55	\$0.00	\$41.50
	12/01/2016	\$20.50	\$7.45	\$13.55	\$0.00	\$41.50
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	09/01/2015	\$41.59	\$9.80	\$17.53	\$0.00	\$68.92

Apprentice - FLOORCOVERER - Local 2168 Zone 1

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.80	\$9.80	\$1.79	\$0.00	\$32.39
2	55	\$22.87	\$9.80	\$1.79	\$0.00	\$34.46
3	60	\$24.95	\$9.80	\$12.16	\$0.00	\$46.91
4	65	\$27.03	\$9.80	\$12.16	\$0.00	\$48.99
5	70	\$29.11	\$9.80	\$13.95	\$0.00	\$52.86
6	75	\$31.19	\$9.80	\$13.95	\$0.00	\$54.94
7	80	\$33.27	\$9.80	\$15.74	\$0.00	\$58.81
8	85	\$35.35	\$9.80	\$15.74	\$0.00	\$60.89

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$30.13	\$10.00	\$14.90	\$0.00	\$55.03
	06/01/2016	\$30.65	\$10.00	\$14.90	\$0.00	\$55.55
	12/01/2016	\$31.52	\$10.00	\$14.90	\$0.00	\$56.42
	06/01/2017	\$32.21	\$10.00	\$14.90	\$0.00	\$57.11
	12/01/2017	\$32.90	\$10.00	\$14.90	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 1)</i>	01/01/2016	\$44.80	\$7.85	\$16.10	\$0.00	\$68.75
	07/01/2016	\$45.75	\$7.85	\$16.10	\$0.00	\$69.70
	01/01/2017	\$46.70	\$7.85	\$16.10	\$0.00	\$70.65

Apprentice - GLAZIER - Local 35 Zone 1

Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.40	\$7.85	\$0.00	\$0.00	\$30.25
2	55	\$24.64	\$7.85	\$3.66	\$0.00	\$36.15
3	60	\$26.88	\$7.85	\$3.99	\$0.00	\$38.72
4	65	\$29.12	\$7.85	\$4.32	\$0.00	\$41.29
5	70	\$31.36	\$7.85	\$14.11	\$0.00	\$53.32
6	75	\$33.60	\$7.85	\$14.44	\$0.00	\$55.89
7	80	\$35.84	\$7.85	\$14.77	\$0.00	\$58.46
8	90	\$40.32	\$7.85	\$15.44	\$0.00	\$63.61

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.88	\$7.85	\$0.00	\$0.00	\$30.73
2	55	\$25.16	\$7.85	\$3.66	\$0.00	\$36.67
3	60	\$27.45	\$7.85	\$3.99	\$0.00	\$39.29
4	65	\$29.74	\$7.85	\$4.32	\$0.00	\$41.91
5	70	\$32.03	\$7.85	\$14.11	\$0.00	\$53.99
6	75	\$34.31	\$7.85	\$14.44	\$0.00	\$56.60
7	80	\$36.60	\$7.85	\$14.77	\$0.00	\$59.22
8	90	\$41.18	\$7.85	\$15.44	\$0.00	\$64.47

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.05	\$10.00	\$0.00	\$0.00	\$34.05
2	60	\$26.24	\$10.00	\$14.90	\$0.00	\$51.14
3	65	\$28.42	\$10.00	\$14.90	\$0.00	\$53.32
4	70	\$30.61	\$10.00	\$14.90	\$0.00	\$55.51
5	75	\$32.80	\$10.00	\$14.90	\$0.00	\$57.70
6	80	\$34.98	\$10.00	\$14.90	\$0.00	\$59.88
7	85	\$37.17	\$10.00	\$14.90	\$0.00	\$62.07
8	90	\$39.36	\$10.00	\$14.90	\$0.00	\$64.26

Effective Date - 06/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.46	\$10.00	\$0.00	\$0.00	\$34.46
2	60	\$26.69	\$10.00	\$14.90	\$0.00	\$51.59
3	65	\$28.91	\$10.00	\$14.90	\$0.00	\$53.81
4	70	\$31.14	\$10.00	\$14.90	\$0.00	\$56.04
5	75	\$33.36	\$10.00	\$14.90	\$0.00	\$58.26
6	80	\$35.58	\$10.00	\$14.90	\$0.00	\$60.48
7	85	\$37.81	\$10.00	\$14.90	\$0.00	\$62.71
8	90	\$40.03	\$10.00	\$14.90	\$0.00	\$64.93

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2016	\$43.31	\$10.70	\$21.95	\$2.28	\$78.24
	08/01/2016	\$44.46	\$10.70	\$21.95	\$2.28	\$79.39
	02/01/2017	\$45.56	\$10.70	\$21.95	\$2.28	\$80.49
	08/01/2017	\$46.66	\$10.70	\$21.95	\$2.28	\$81.59
	02/01/2018	\$47.81	\$10.70	\$21.95	\$2.28	\$82.74

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$45.67	\$13.00	\$15.89	\$0.00	\$74.56
	03/01/2016	\$46.17	\$13.00	\$16.39	\$0.00	\$75.56

For apprentice rates see "Apprentice- ELECTRICIAN"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2016	\$43.31	\$10.70	\$21.95	\$2.28	\$78.24
	08/01/2016	\$44.46	\$10.70	\$21.95	\$2.28	\$79.39
	02/01/2017	\$45.56	\$10.70	\$21.95	\$2.28	\$80.49
	08/01/2017	\$46.66	\$10.70	\$21.95	\$2.28	\$81.59
	02/01/2018	\$47.81	\$10.70	\$21.95	\$2.28	\$82.74
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	09/01/2015	\$49.69	\$9.70	\$16.89	\$0.00	\$76.28
	03/01/2016	\$49.19	\$9.70	\$18.14	\$0.00	\$77.03
	09/01/2016	\$50.19	\$9.70	\$18.14	\$0.00	\$78.03
	03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	09/01/2015	\$49.69	\$9.70	\$16.89	\$0.00	\$76.28
	03/01/2016	\$49.19	\$9.70	\$18.14	\$0.00	\$77.03
	09/01/2016	\$50.19	\$9.70	\$18.14	\$0.00	\$78.03
	03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	06/01/2016	\$36.85	\$7.45	\$13.55	\$0.00	\$57.85
	12/01/2016	\$37.85	\$7.45	\$13.55	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2015	\$43.81	\$11.50	\$13.80	\$0.00	\$69.11
	09/01/2016	\$45.81	\$11.50	\$13.80	\$0.00	\$71.11
	09/01/2017	\$47.81	\$11.50	\$13.80	\$0.00	\$73.11
	09/01/2018	\$50.06	\$11.50	\$13.80	\$0.00	\$75.36
	09/01/2019	\$52.56	\$11.50	\$13.80	\$0.00	\$77.86

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.91	\$11.50	\$10.05	\$0.00	\$43.46
2	60	\$26.29	\$11.50	\$10.80	\$0.00	\$48.59
3	70	\$30.67	\$11.50	\$11.55	\$0.00	\$53.72
4	80	\$35.05	\$11.50	\$12.30	\$0.00	\$58.85

Effective Date - 09/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.91	\$11.50	\$10.05	\$0.00	\$44.46
2	60	\$27.49	\$11.50	\$10.80	\$0.00	\$49.79
3	70	\$32.07	\$11.50	\$11.55	\$0.00	\$55.12
4	80	\$36.65	\$11.50	\$12.30	\$0.00	\$60.45

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
IRONWORKER/WELDER	09/16/2015	\$42.40	\$7.80	\$20.85	\$0.00	\$71.05
IRONWORKERS LOCAL 7 (BOSTON AREA)	03/16/2016	\$43.40	\$7.80	\$20.85	\$0.00	\$72.05
	09/16/2016	\$44.05	\$7.80	\$20.85	\$0.00	\$72.70
	03/16/2017	\$44.65	\$7.80	\$20.85	\$0.00	\$73.30

Apprentice - IRONWORKER - Local 7 Boston

Effective Date - 09/16/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.44	\$7.80	\$20.85	\$0.00	\$54.09
2	70	\$29.68	\$7.80	\$20.85	\$0.00	\$58.33
3	75	\$31.80	\$7.80	\$20.85	\$0.00	\$60.45
4	80	\$33.92	\$7.80	\$20.85	\$0.00	\$62.57
5	85	\$36.04	\$7.80	\$20.85	\$0.00	\$64.69
6	90	\$38.16	\$7.80	\$20.85	\$0.00	\$66.81

Effective Date - 03/16/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$26.04	\$7.80	\$20.85	\$0.00	\$54.69
2	70	\$30.38	\$7.80	\$20.85	\$0.00	\$59.03
3	75	\$32.55	\$7.80	\$20.85	\$0.00	\$61.20
4	80	\$34.72	\$7.80	\$20.85	\$0.00	\$63.37
5	85	\$36.89	\$7.80	\$20.85	\$0.00	\$65.54
6	90	\$39.06	\$7.80	\$20.85	\$0.00	\$67.71

Notes:

** Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:**

JACKHAMMER & PAVING BREAKER OPERATOR	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
LABORERS - ZONE 1	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
LABORER	12/01/2015	\$35.35	\$7.45	\$13.55	\$0.00	\$56.35
LABORERS - ZONE 1	06/01/2016	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	12/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - LABORER - Zone 1

Effective Date - 12/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.21	\$7.45	\$13.55	\$0.00	\$42.21
2	70	\$24.75	\$7.45	\$13.55	\$0.00	\$45.75
3	80	\$28.28	\$7.45	\$13.55	\$0.00	\$49.28
4	90	\$31.82	\$7.45	\$13.55	\$0.00	\$52.82

Effective Date - 06/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.66	\$7.45	\$13.55	\$0.00	\$42.66
2	70	\$25.27	\$7.45	\$13.55	\$0.00	\$46.27
3	80	\$28.88	\$7.45	\$13.55	\$0.00	\$49.88
4	90	\$32.49	\$7.45	\$13.55	\$0.00	\$53.49

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER LABORERS - ZONE 1	12/01/2015	\$35.35	\$7.45	\$13.55	\$0.00	\$56.35
	06/01/2016	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	12/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 1	12/01/2015	\$35.35	\$7.45	\$13.55	\$0.00	\$56.35
	06/01/2016	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	12/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 1	12/01/2015	\$35.50	\$7.45	\$13.55	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER LABORERS - ZONE 1	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER LABORERS - ZONE 1	12/01/2015	\$35.35	\$7.45	\$13.55	\$0.00	\$56.35
	06/01/2016	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	12/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER LABORERS - ZONE 1	12/01/2015	\$35.35	\$7.45	\$13.55	\$0.00	\$56.35
	06/01/2016	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10
	12/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10
This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR LABORERS - ZONE 1	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE & TILE FINISHERS	02/01/2016	\$38.08	\$10.18	\$17.70	\$0.00	\$65.96
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2016	\$38.78	\$10.18	\$17.78	\$0.00	\$66.74
	02/01/2017	\$39.24	\$10.18	\$17.78	\$0.00	\$67.20

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.04	\$10.18	\$17.70	\$0.00	\$46.92
2	60	\$22.85	\$10.18	\$17.70	\$0.00	\$50.73
3	70	\$26.66	\$10.18	\$17.70	\$0.00	\$54.54
4	80	\$30.46	\$10.18	\$17.70	\$0.00	\$58.34
5	90	\$34.27	\$10.18	\$17.70	\$0.00	\$62.15

Effective Date - 08/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.39	\$10.18	\$17.78	\$0.00	\$47.35
2	60	\$23.27	\$10.18	\$17.78	\$0.00	\$51.23
3	70	\$27.15	\$10.18	\$17.78	\$0.00	\$55.11
4	80	\$31.02	\$10.18	\$17.78	\$0.00	\$58.98
5	90	\$34.90	\$10.18	\$17.78	\$0.00	\$62.86

Notes:

Apprentice to Journeyworker Ratio:1:3

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	02/01/2016	\$49.90	\$10.18	\$19.14	\$0.00	\$79.22
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2016	\$50.80	\$10.18	\$19.22	\$0.00	\$80.20
	02/01/2017	\$51.37	\$10.18	\$19.22	\$0.00	\$80.77

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile
Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.95	\$10.18	\$19.14	\$0.00	\$54.27
2	60	\$29.94	\$10.18	\$19.14	\$0.00	\$59.26
3	70	\$34.93	\$10.18	\$19.14	\$0.00	\$64.25
4	80	\$39.92	\$10.18	\$19.14	\$0.00	\$69.24
5	90	\$44.91	\$10.18	\$19.14	\$0.00	\$74.23

Effective Date - 08/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.40	\$10.18	\$19.22	\$0.00	\$54.80
2	60	\$30.48	\$10.18	\$19.22	\$0.00	\$59.88
3	70	\$35.56	\$10.18	\$19.22	\$0.00	\$64.96
4	80	\$40.64	\$10.18	\$19.22	\$0.00	\$70.04
5	90	\$45.72	\$10.18	\$19.22	\$0.00	\$75.12

Notes:
Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES)	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANICS MAINTENANCE	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 1)	04/01/2015	\$37.64	\$9.80	\$16.21	\$0.00	\$63.65
MILLWRIGHTS LOCAL 1121 - Zone 1						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Apprentice - MILLWRIGHT - Local 1121 Zone 1						
Effective Date - 04/01/2015						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$20.70	\$9.80	\$4.48	\$0.00	\$34.98
2	65	\$24.47	\$9.80	\$13.36	\$0.00	\$47.63
3	75	\$28.23	\$9.80	\$14.18	\$0.00	\$52.21
4	85	\$31.99	\$9.80	\$14.99	\$0.00	\$56.78
Notes:						
Steps are 2,000 hours						
Apprentice to Journeyworker Ratio:1:5						
MORTAR MIXER	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
LABORERS - ZONE 1	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS)	12/01/2015	\$22.27	\$10.00	\$14.90	\$0.00	\$47.17
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$22.66	\$10.00	\$14.90	\$0.00	\$47.56
	12/01/2016	\$23.31	\$10.00	\$14.90	\$0.00	\$48.21
	06/01/2017	\$23.82	\$10.00	\$14.90	\$0.00	\$48.72
	12/01/2017	\$24.34	\$10.00	\$14.90	\$0.00	\$49.24
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OILER (TRUCK CRANES, GRADALLS)	12/01/2015	\$26.08	\$10.00	\$14.90	\$0.00	\$50.98
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$26.54	\$10.00	\$14.90	\$0.00	\$51.44
	12/01/2016	\$27.29	\$10.00	\$14.90	\$0.00	\$52.19
	06/01/2017	\$27.89	\$10.00	\$14.90	\$0.00	\$52.79
	12/01/2017	\$28.50	\$10.00	\$14.90	\$0.00	\$53.40
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS)	01/01/2016	\$49.51	\$7.85	\$16.10	\$0.00	\$73.46
PAINTERS LOCAL 35 - ZONE 1	07/01/2016	\$50.46	\$7.85	\$16.10	\$0.00	\$74.41
	01/01/2017	\$51.41	\$7.85	\$16.10	\$0.00	\$75.36

Apprentice - PAINTER Local 35 - BRIDGES/TANKS**Effective Date - 01/01/2016**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.76	\$7.85	\$0.00	\$0.00	\$32.61
2	55	\$27.23	\$7.85	\$3.66	\$0.00	\$38.74
3	60	\$29.71	\$7.85	\$3.99	\$0.00	\$41.55
4	65	\$32.18	\$7.85	\$4.32	\$0.00	\$44.35
5	70	\$34.66	\$7.85	\$14.11	\$0.00	\$56.62
6	75	\$37.13	\$7.85	\$14.44	\$0.00	\$59.42
7	80	\$39.61	\$7.85	\$14.77	\$0.00	\$62.23
8	90	\$44.56	\$7.85	\$15.44	\$0.00	\$67.85

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.23	\$7.85	\$0.00	\$0.00	\$33.08
2	55	\$27.75	\$7.85	\$3.66	\$0.00	\$39.26
3	60	\$30.28	\$7.85	\$3.99	\$0.00	\$42.12
4	65	\$32.80	\$7.85	\$4.32	\$0.00	\$44.97
5	70	\$35.32	\$7.85	\$14.11	\$0.00	\$57.28
6	75	\$37.85	\$7.85	\$14.44	\$0.00	\$60.14
7	80	\$40.37	\$7.85	\$14.77	\$0.00	\$62.99
8	90	\$45.41	\$7.85	\$15.44	\$0.00	\$68.70

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *

* If 30% or more of surfaces to be painted are new construction,

NEW paint rate shall be used. *PAINTERS LOCAL 35 - ZONE 1*

01/01/2016	\$46.20	\$7.85	\$16.10	\$0.00	\$70.15
07/01/2016	\$47.15	\$7.85	\$16.10	\$0.00	\$71.10
01/01/2017	\$48.10	\$7.85	\$16.10	\$0.00	\$72.05

Apprentice - PAINTER Local 35 Zone 1 - Spray/Sandblast - New**Effective Date -** 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.10	\$7.85	\$0.00	\$0.00	\$30.95
2	55	\$25.41	\$7.85	\$3.66	\$0.00	\$36.92
3	60	\$27.72	\$7.85	\$3.99	\$0.00	\$39.56
4	65	\$30.03	\$7.85	\$4.32	\$0.00	\$42.20
5	70	\$32.34	\$7.85	\$14.11	\$0.00	\$54.30
6	75	\$34.65	\$7.85	\$14.44	\$0.00	\$56.94
7	80	\$36.96	\$7.85	\$14.77	\$0.00	\$59.58
8	90	\$41.58	\$7.85	\$15.44	\$0.00	\$64.87

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.58	\$7.85	\$0.00	\$0.00	\$31.43
2	55	\$25.93	\$7.85	\$3.66	\$0.00	\$37.44
3	60	\$28.29	\$7.85	\$3.99	\$0.00	\$40.13
4	65	\$30.65	\$7.85	\$4.32	\$0.00	\$42.82
5	70	\$33.01	\$7.85	\$14.11	\$0.00	\$54.97
6	75	\$35.36	\$7.85	\$14.44	\$0.00	\$57.65
7	80	\$37.72	\$7.85	\$14.77	\$0.00	\$60.34
8	90	\$42.44	\$7.85	\$15.44	\$0.00	\$65.73

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)

PAINTERS LOCAL 35 - ZONE 1

01/01/2016	\$44.26	\$7.85	\$16.10	\$0.00	\$68.21
07/01/2016	\$45.21	\$7.85	\$16.10	\$0.00	\$69.16
01/01/2017	\$46.16	\$7.85	\$16.10	\$0.00	\$70.11

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - PAINTER Local 35 Zone 1 - Spray/Sandblast - Repaint
Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.13	\$7.85	\$0.00	\$0.00	\$29.98
2	55	\$24.34	\$7.85	\$3.66	\$0.00	\$35.85
3	60	\$26.56	\$7.85	\$3.99	\$0.00	\$38.40
4	65	\$28.77	\$7.85	\$4.32	\$0.00	\$40.94
5	70	\$30.98	\$7.85	\$14.11	\$0.00	\$52.94
6	75	\$33.20	\$7.85	\$14.44	\$0.00	\$55.49
7	80	\$35.41	\$7.85	\$14.77	\$0.00	\$58.03
8	90	\$39.83	\$7.85	\$15.44	\$0.00	\$63.12

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.61	\$7.85	\$0.00	\$0.00	\$30.46
2	55	\$24.87	\$7.85	\$3.66	\$0.00	\$36.38
3	60	\$27.13	\$7.85	\$3.99	\$0.00	\$38.97
4	65	\$29.39	\$7.85	\$4.32	\$0.00	\$41.56
5	70	\$31.65	\$7.85	\$14.11	\$0.00	\$53.61
6	75	\$33.91	\$7.85	\$14.44	\$0.00	\$56.20
7	80	\$36.17	\$7.85	\$14.77	\$0.00	\$58.79
8	90	\$40.69	\$7.85	\$15.44	\$0.00	\$63.98

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS)	12/01/2015	\$35.35	\$7.45	\$13.55	\$0.00	\$56.35
LABORERS - ZONE 1	06/01/2016	\$36.10	\$7.45	\$13.55	\$0.00	\$57.10

	12/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10
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For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2016	\$44.80	\$7.85	\$16.10	\$0.00	\$68.75
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 1	07/01/2016	\$45.75	\$7.85	\$16.10	\$0.00	\$69.70
	01/01/2017	\$46.70	\$7.85	\$16.10	\$0.00	\$70.65

Apprentice - PAINTER - Local 35 Zone 1 - BRUSH NEW**Effective Date - 01/01/2016**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.40	\$7.85	\$0.00	\$0.00	\$30.25
2	55	\$24.64	\$7.85	\$3.66	\$0.00	\$36.15
3	60	\$26.88	\$7.85	\$3.99	\$0.00	\$38.72
4	65	\$29.12	\$7.85	\$4.32	\$0.00	\$41.29
5	70	\$31.36	\$7.85	\$14.11	\$0.00	\$53.32
6	75	\$33.60	\$7.85	\$14.44	\$0.00	\$55.89
7	80	\$35.84	\$7.85	\$14.77	\$0.00	\$58.46
8	90	\$40.32	\$7.85	\$15.44	\$0.00	\$63.61

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.88	\$7.85	\$0.00	\$0.00	\$30.73
2	55	\$25.16	\$7.85	\$3.66	\$0.00	\$36.67
3	60	\$27.45	\$7.85	\$3.99	\$0.00	\$39.29
4	65	\$29.74	\$7.85	\$4.32	\$0.00	\$41.91
5	70	\$32.03	\$7.85	\$14.11	\$0.00	\$53.99
6	75	\$34.31	\$7.85	\$14.44	\$0.00	\$56.60
7	80	\$36.60	\$7.85	\$14.77	\$0.00	\$59.22
8	90	\$41.18	\$7.85	\$15.44	\$0.00	\$64.47

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2016	\$42.86	\$7.85	\$16.10	\$0.00	\$66.81
PAINTERS LOCAL 35 - ZONE 1	07/01/2016	\$43.81	\$7.85	\$16.10	\$0.00	\$67.76
	01/01/2017	\$44.76	\$7.85	\$16.10	\$0.00	\$68.71

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - PAINTER Local 35 Zone 1 - BRUSH REPAINT
Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.43	\$7.85	\$0.00	\$0.00	\$29.28
2	55	\$23.57	\$7.85	\$3.66	\$0.00	\$35.08
3	60	\$25.72	\$7.85	\$3.99	\$0.00	\$37.56
4	65	\$27.86	\$7.85	\$4.32	\$0.00	\$40.03
5	70	\$30.00	\$7.85	\$14.11	\$0.00	\$51.96
6	75	\$32.15	\$7.85	\$14.44	\$0.00	\$54.44
7	80	\$34.29	\$7.85	\$14.77	\$0.00	\$56.91
8	90	\$38.57	\$7.85	\$15.44	\$0.00	\$61.86

Effective Date - 07/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.91	\$7.85	\$0.00	\$0.00	\$29.76
2	55	\$24.10	\$7.85	\$3.66	\$0.00	\$35.61
3	60	\$26.29	\$7.85	\$3.99	\$0.00	\$38.13
4	65	\$28.48	\$7.85	\$4.32	\$0.00	\$40.65
5	70	\$30.67	\$7.85	\$14.11	\$0.00	\$52.63
6	75	\$32.86	\$7.85	\$14.44	\$0.00	\$55.15
7	80	\$35.05	\$7.85	\$14.77	\$0.00	\$57.67
8	90	\$39.43	\$7.85	\$15.44	\$0.00	\$62.72

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1
PANEL & PICKUP TRUCKS DRIVER
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A

12/01/2015	\$32.58	\$10.41	\$10.08	\$0.00	\$53.07
06/01/2016	\$33.08	\$10.41	\$10.08	\$0.00	\$53.57
08/01/2016	\$33.08	\$10.91	\$10.08	\$0.00	\$54.07
12/01/2016	\$33.08	\$10.91	\$10.89	\$0.00	\$54.88

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)
PILE DRIVER LOCAL 56 (ZONE 1)

For apprentice rates see "Apprentice- PILE DRIVER"

08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
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PILE DRIVER
PILE DRIVER LOCAL 56 (ZONE 1)

08/01/2015	\$42.04	\$9.80	\$19.23	\$0.00	\$71.07
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Apprentice - PILE DRIVER - Local 56 Zone 1**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.02	\$9.80	\$19.23	\$0.00	\$50.05
2	60	\$25.22	\$9.80	\$19.23	\$0.00	\$54.25
3	70	\$29.43	\$9.80	\$19.23	\$0.00	\$58.46
4	75	\$31.53	\$9.80	\$19.23	\$0.00	\$60.56
5	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
6	80	\$33.63	\$9.80	\$19.23	\$0.00	\$62.66
7	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87
8	90	\$37.84	\$9.80	\$19.23	\$0.00	\$66.87

Notes:**Apprentice to Journeyworker Ratio:1:3****PIPEFITTER & STEAMFITTER***PIPEFITTERS LOCAL 537*

09/01/2015	\$49.69	\$9.70	\$16.89	\$0.00	\$76.28
03/01/2016	\$49.19	\$9.70	\$18.14	\$0.00	\$77.03
09/01/2016	\$50.19	\$9.70	\$18.14	\$0.00	\$78.03
03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03

Apprentice - PIPEFITTER - Local 537**Effective Date - 09/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.88	\$9.70	\$7.50	\$0.00	\$37.08
2	45	\$22.36	\$9.70	\$16.89	\$0.00	\$48.95
3	60	\$29.81	\$9.70	\$16.89	\$0.00	\$56.40
4	70	\$34.78	\$9.70	\$16.89	\$0.00	\$61.37
5	80	\$39.75	\$9.70	\$16.89	\$0.00	\$66.34

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.68	\$9.70	\$7.50	\$0.00	\$36.88
2	45	\$22.14	\$9.70	\$18.14	\$0.00	\$49.98
3	60	\$29.51	\$9.70	\$18.14	\$0.00	\$57.35
4	70	\$34.43	\$9.70	\$18.14	\$0.00	\$62.27
5	80	\$39.35	\$9.70	\$18.14	\$0.00	\$67.19

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						

PLUMBERS & GASFITTERS <i>PLUMBERS & GASFITTERS LOCAL 12</i>	09/01/2015	\$50.46	\$10.82	\$15.14	\$0.00	\$76.42
	03/01/2016	\$51.61	\$10.82	\$15.14	\$0.00	\$77.57
	09/01/2016	\$52.66	\$10.82	\$15.14	\$0.00	\$78.62
	03/01/2017	\$53.66	\$10.82	\$15.14	\$0.00	\$79.62

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 09/01/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.66	\$10.82	\$5.63	\$0.00	\$34.11
2	40	\$20.18	\$10.82	\$6.37	\$0.00	\$37.37
3	55	\$27.75	\$10.82	\$8.56	\$0.00	\$47.13
4	65	\$32.80	\$10.82	\$10.03	\$0.00	\$53.65
5	75	\$37.85	\$10.82	\$11.48	\$0.00	\$60.15

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.06	\$10.82	\$5.63	\$0.00	\$34.51
2	40	\$20.64	\$10.82	\$6.37	\$0.00	\$37.83
3	55	\$28.39	\$10.82	\$8.56	\$0.00	\$47.77
4	65	\$33.55	\$10.82	\$10.03	\$0.00	\$54.40
5	75	\$38.71	\$10.82	\$11.48	\$0.00	\$61.01

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr
Step4 with lic\$56.90 Step5 with lic\$63.40

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	09/01/2015	\$49.69	\$9.70	\$16.89	\$0.00	\$76.28
	03/01/2016	\$49.19	\$9.70	\$18.14	\$0.00	\$77.03
	09/01/2016	\$50.19	\$9.70	\$18.14	\$0.00	\$78.03
	03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER <i>LABORERS - ZONE 1</i>	12/01/2015	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	06/01/2016	\$37.10	\$7.45	\$13.55	\$0.00	\$58.10
	12/01/2016	\$38.10	\$7.45	\$13.55	\$0.00	\$59.10

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$30.13	\$10.00	\$14.90	\$0.00	\$55.03
	06/01/2016	\$30.65	\$10.00	\$14.90	\$0.00	\$55.55
	12/01/2016	\$31.52	\$10.00	\$14.90	\$0.00	\$56.42
	06/01/2017	\$32.21	\$10.00	\$14.90	\$0.00	\$57.11
	12/01/2017	\$32.90	\$10.00	\$14.90	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY MIX CONCRETE DRIVERS after 4/30/10 (Drivers Hired After 4/30/2010) <i>TEAMSTERS LOCAL 25a</i>	07/01/2015	\$27.88	\$7.98	\$8.92	\$0.00	\$44.78
	05/01/2016	\$28.03	\$7.98	\$9.31	\$0.00	\$45.32
	07/01/2016	\$28.03	\$8.23	\$9.31	\$0.00	\$45.57
	05/01/2017	\$28.18	\$8.23	\$9.72	\$0.00	\$46.13
	07/01/2017	\$28.18	\$8.48	\$9.72	\$0.00	\$46.38
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 25a</i>	07/01/2015	\$31.14	\$7.98	\$8.92	\$0.00	\$48.04
	05/01/2016	\$31.29	\$7.98	\$9.31	\$0.00	\$48.58
	07/01/2016	\$31.29	\$8.23	\$9.31	\$0.00	\$48.83
	05/01/2017	\$31.44	\$8.23	\$9.72	\$0.00	\$49.39
	07/01/2017	\$31.44	\$8.48	\$9.72	\$0.00	\$49.64
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 1 (Residential Wood)</i>	04/01/2011	\$37.25	\$8.67	\$15.51	\$0.00	\$61.43
RESIDENTIAL WOOD FRAME CARPENTER ** ** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. <i>CARPENTERS -ZONE 1 (Residential Wood)</i> As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.	05/01/2011	\$27.49	\$6.34	\$6.23	\$0.00	\$40.06

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - CARPENTER (Residential Wood Frame) - Zone 1

Effective Date - 05/01/2011

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.49	\$6.34	\$0.00	\$0.00	\$22.83
2	60	\$16.49	\$6.34	\$6.23	\$0.00	\$29.06
3	65	\$17.87	\$6.34	\$6.23	\$0.00	\$30.44
4	70	\$19.24	\$6.34	\$6.23	\$0.00	\$31.81
5	75	\$20.62	\$6.34	\$6.23	\$0.00	\$33.19
6	80	\$21.99	\$6.34	\$6.23	\$0.00	\$34.56
7	85	\$23.37	\$6.34	\$6.23	\$0.00	\$35.94
8	90	\$24.74	\$6.34	\$6.23	\$0.00	\$37.31

Notes:

Apprentice to Journeyworker Ratio:1:5

RIDE-ON MOTORIZED BUGGY OPERATOR	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
LABORERS - ZONE 1	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

ROLLER/SPREADER/MULCHING MACHINE	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
OPERATING ENGINEERS LOCAL 4	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg)	02/01/2016	\$40.11	\$11.00	\$12.90	\$0.00	\$64.01
ROOFERS LOCAL 33						

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.06	\$11.00	\$3.39	\$0.00	\$34.45
2	60	\$24.07	\$11.00	\$12.90	\$0.00	\$47.97
3	65	\$26.07	\$11.00	\$12.90	\$0.00	\$49.97
4	75	\$30.08	\$11.00	\$12.90	\$0.00	\$53.98
5	85	\$34.09	\$11.00	\$12.90	\$0.00	\$57.99

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE	02/01/2016	\$40.36	\$11.00	\$12.90	\$0.00	\$64.26
ROOFERS LOCAL 33						

For apprentice rates see "Apprentice- ROOFER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SHEETMETAL WORKER	02/01/2016	\$43.31	\$10.70	\$21.95	\$2.28	\$78.24
<i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2016	\$44.46	\$10.70	\$21.95	\$2.28	\$79.39
	02/01/2017	\$45.56	\$10.70	\$21.95	\$2.28	\$80.49
	08/01/2017	\$46.66	\$10.70	\$21.95	\$2.28	\$81.59
	02/01/2018	\$47.81	\$10.70	\$21.95	\$2.28	\$82.74

Apprentice - SHEET METAL WORKER - Local 17-A

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.32	\$10.70	\$4.90	\$0.00	\$32.92
2	40	\$17.32	\$10.70	\$4.90	\$0.00	\$32.92
3	45	\$19.49	\$10.70	\$9.79	\$1.20	\$41.18
4	45	\$19.49	\$10.70	\$9.79	\$1.20	\$41.18
5	50	\$21.66	\$10.70	\$10.65	\$1.29	\$44.30
6	50	\$21.66	\$10.70	\$10.90	\$1.30	\$44.56
7	60	\$25.99	\$10.70	\$12.37	\$1.47	\$50.53
8	65	\$28.15	\$10.70	\$13.24	\$1.56	\$53.65
9	75	\$32.48	\$10.70	\$14.97	\$1.74	\$59.89
10	85	\$36.81	\$10.70	\$16.18	\$1.91	\$65.60

Effective Date - 08/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.78	\$10.70	\$4.90	\$0.00	\$33.38
2	40	\$17.78	\$10.70	\$4.90	\$0.00	\$33.38
3	45	\$20.01	\$10.70	\$9.79	\$1.22	\$41.72
4	45	\$20.01	\$10.70	\$9.79	\$1.22	\$41.72
5	50	\$22.23	\$10.70	\$10.65	\$1.31	\$44.89
6	50	\$22.23	\$10.70	\$10.90	\$1.31	\$45.14
7	60	\$26.68	\$10.70	\$12.37	\$1.49	\$51.24
8	65	\$28.90	\$10.70	\$13.24	\$1.59	\$54.43
9	75	\$33.35	\$10.70	\$14.97	\$1.77	\$60.79
10	85	\$37.79	\$10.70	\$16.18	\$1.94	\$66.61

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SIGN ERECTOR	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
<i>PAINTERS LOCAL 35 - ZONE 1</i>						

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - SIGN ERECTOR - Local 35 Zone 1
Effective Date - 06/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

Notes:

Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$33.04	\$10.41	\$10.08	\$0.00	\$53.53
	06/01/2016	\$33.54	\$10.41	\$10.08	\$0.00	\$54.03
	08/01/2016	\$33.54	\$10.91	\$10.08	\$0.00	\$54.53
	12/01/2016	\$33.54	\$10.91	\$10.89	\$0.00	\$55.34
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$33.33	\$10.41	\$10.08	\$0.00	\$53.82
	06/01/2016	\$33.83	\$10.41	\$10.08	\$0.00	\$54.32
	08/01/2016	\$33.83	\$10.91	\$10.08	\$0.00	\$54.82
	12/01/2016	\$33.83	\$10.91	\$10.89	\$0.00	\$55.63
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	01/01/2016	\$54.43	\$8.67	\$15.80	\$0.00	\$78.90
	03/01/2016	\$55.43	\$8.67	\$15.80	\$0.00	\$79.90
	10/01/2016	\$56.58	\$8.67	\$15.80	\$0.00	\$81.05
	03/01/2017	\$57.58	\$8.67	\$15.80	\$0.00	\$82.05

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1
Effective Date - 01/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.05	\$8.67	\$8.55	\$0.00	\$36.27
2	40	\$21.77	\$8.67	\$8.55	\$0.00	\$38.99
3	45	\$24.49	\$8.67	\$8.55	\$0.00	\$41.71
4	50	\$27.22	\$8.67	\$8.55	\$0.00	\$44.44
5	55	\$29.94	\$8.67	\$8.55	\$0.00	\$47.16
6	60	\$32.66	\$8.67	\$8.55	\$0.00	\$49.88
7	65	\$35.38	\$8.67	\$8.55	\$0.00	\$52.60
8	70	\$38.10	\$8.67	\$8.55	\$0.00	\$55.32
9	75	\$40.82	\$8.67	\$8.55	\$0.00	\$58.04
10	80	\$43.54	\$8.67	\$8.55	\$0.00	\$60.76

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.40	\$8.67	\$8.55	\$0.00	\$36.62
2	40	\$22.17	\$8.67	\$8.55	\$0.00	\$39.39
3	45	\$24.94	\$8.67	\$8.55	\$0.00	\$42.16
4	50	\$27.72	\$8.67	\$8.55	\$0.00	\$44.94
5	55	\$30.49	\$8.67	\$8.55	\$0.00	\$47.71
6	60	\$33.26	\$8.67	\$8.55	\$0.00	\$50.48
7	65	\$36.03	\$8.67	\$8.55	\$0.00	\$53.25
8	70	\$38.80	\$8.67	\$8.55	\$0.00	\$56.02
9	75	\$41.57	\$8.67	\$8.55	\$0.00	\$58.79
10	80	\$44.34	\$8.67	\$8.55	\$0.00	\$61.56

Notes: Apprentice entered prior 9/30/10:
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2015	\$34.25	\$13.00	\$14.06	\$0.00	\$61.31
	03/01/2016	\$34.63	\$13.00	\$14.55	\$0.00	\$62.18

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103**Effective Date - 09/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.70	\$13.00	\$0.41	\$0.00	\$27.11
2	40	\$13.70	\$13.00	\$0.41	\$0.00	\$27.11
3	45	\$15.41	\$13.00	\$11.03	\$0.00	\$39.44
4	45	\$15.41	\$13.00	\$11.03	\$0.00	\$39.44
5	50	\$17.13	\$13.00	\$11.30	\$0.00	\$41.43
6	55	\$18.84	\$13.00	\$11.58	\$0.00	\$43.42
7	60	\$20.55	\$13.00	\$11.86	\$0.00	\$45.41
8	65	\$22.26	\$13.00	\$12.13	\$0.00	\$47.39
9	70	\$23.98	\$13.00	\$12.41	\$0.00	\$49.39
10	75	\$25.69	\$13.00	\$12.68	\$0.00	\$51.37

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.85	\$13.00	\$0.42	\$0.00	\$27.27
2	40	\$13.85	\$13.00	\$0.42	\$0.00	\$27.27
3	45	\$15.58	\$13.00	\$11.52	\$0.00	\$40.10
4	45	\$15.58	\$13.00	\$11.52	\$0.00	\$40.10
5	50	\$17.32	\$13.00	\$11.79	\$0.00	\$42.11
6	55	\$19.05	\$13.00	\$12.06	\$0.00	\$44.11
7	60	\$20.78	\$13.00	\$12.34	\$0.00	\$46.12
8	65	\$22.51	\$13.00	\$12.62	\$0.00	\$48.13
9	70	\$24.24	\$13.00	\$12.90	\$0.00	\$50.14
10	75	\$25.97	\$13.00	\$13.17	\$0.00	\$52.14

Notes:**Apprentice to Journeyworker Ratio:1:1**

TERRAZZO FINISHERS	02/01/2016	\$48.80	\$10.18	\$19.14	\$0.00	\$78.12
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2016	\$49.70	\$10.18	\$19.22	\$0.00	\$79.10
	02/01/2017	\$50.27	\$10.18	\$19.22	\$0.00	\$79.67

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.40	\$10.18	\$19.14	\$0.00	\$53.72
2	60	\$29.28	\$10.18	\$19.14	\$0.00	\$58.60
3	70	\$34.16	\$10.18	\$19.14	\$0.00	\$63.48
4	80	\$39.04	\$10.18	\$19.14	\$0.00	\$68.36
5	90	\$43.92	\$10.18	\$19.14	\$0.00	\$73.24

Effective Date - 08/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.85	\$10.18	\$19.22	\$0.00	\$54.25
2	60	\$29.82	\$10.18	\$19.22	\$0.00	\$59.22
3	70	\$34.79	\$10.18	\$19.22	\$0.00	\$64.19
4	80	\$39.76	\$10.18	\$19.22	\$0.00	\$69.16
5	90	\$44.73	\$10.18	\$19.22	\$0.00	\$74.13

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2015	\$36.70	\$7.45	\$13.75	\$0.00	\$57.90
	06/01/2016	\$37.45	\$7.45	\$13.75	\$0.00	\$58.65
	12/01/2016	\$38.45	\$7.45	\$13.75	\$0.00	\$59.65
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2015	\$35.42	\$7.45	\$13.75	\$0.00	\$56.62
	06/01/2016	\$36.17	\$7.45	\$13.75	\$0.00	\$57.37
	12/01/2016	\$37.17	\$7.45	\$13.75	\$0.00	\$58.37
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2015	\$35.30	\$7.45	\$13.75	\$0.00	\$56.50
	06/01/2016	\$36.05	\$7.45	\$13.75	\$0.00	\$57.25
	12/01/2016	\$37.05	\$7.45	\$13.75	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.31	\$10.00	\$14.90	\$0.00	\$68.21
	06/01/2016	\$44.06	\$10.00	\$14.90	\$0.00	\$68.96
	12/01/2016	\$45.29	\$10.00	\$14.90	\$0.00	\$70.19
	06/01/2017	\$46.28	\$10.00	\$14.90	\$0.00	\$71.18
	12/01/2017	\$47.27	\$10.00	\$14.90	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$33.62	\$10.41	\$10.08	\$0.00	\$54.11
	06/01/2016	\$34.12	\$10.41	\$10.08	\$0.00	\$54.61
	08/01/2016	\$34.12	\$10.91	\$10.08	\$0.00	\$55.11
	12/01/2016	\$34.12	\$10.91	\$10.89	\$0.00	\$55.92

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2015	\$47.58	\$7.45	\$14.15	\$0.00	\$69.18
	06/01/2016	\$48.33	\$7.45	\$14.15	\$0.00	\$69.93
	12/01/2016	\$49.33	\$7.45	\$14.15	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2015	\$49.58	\$7.45	\$14.15	\$0.00	\$71.18
	06/01/2016	\$50.33	\$7.45	\$14.15	\$0.00	\$71.93
	12/01/2016	\$51.33	\$7.45	\$14.15	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2015	\$39.65	\$7.45	\$14.15	\$0.00	\$61.25
	06/01/2016	\$40.40	\$7.45	\$14.15	\$0.00	\$62.00
	12/01/2016	\$41.40	\$7.45	\$14.15	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2015	\$41.65	\$7.45	\$14.15	\$0.00	\$63.25
	06/01/2016	\$42.40	\$7.45	\$14.15	\$0.00	\$64.00
	12/01/2016	\$43.40	\$7.45	\$14.15	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2015	\$33.04	\$10.41	\$10.08	\$0.00	\$53.53
	06/01/2016	\$33.54	\$10.41	\$10.08	\$0.00	\$54.03
	08/01/2016	\$33.54	\$10.91	\$10.08	\$0.00	\$54.53
	12/01/2016	\$33.54	\$10.91	\$10.89	\$0.00	\$55.34
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2015	\$35.60	\$7.45	\$13.55	\$0.00	\$56.60
	06/01/2016	\$36.35	\$7.45	\$13.55	\$0.00	\$57.35
	12/01/2016	\$37.35	\$7.45	\$13.55	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2015	\$43.73	\$10.00	\$14.90	\$0.00	\$68.63
	06/01/2016	\$44.48	\$10.00	\$14.90	\$0.00	\$69.38
	12/01/2016	\$45.73	\$10.00	\$14.90	\$0.00	\$70.63
	06/01/2017	\$46.73	\$10.00	\$14.90	\$0.00	\$71.63
	12/01/2017	\$47.73	\$10.00	\$14.90	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	09/01/2015	\$50.46	\$10.82	\$15.14	\$0.00	\$76.42
	03/01/2016	\$51.61	\$10.82	\$15.14	\$0.00	\$77.57
	09/01/2016	\$52.66	\$10.82	\$15.14	\$0.00	\$78.62
	03/01/2017	\$53.66	\$10.82	\$15.14	\$0.00	\$79.62
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$26.11	\$7.25	\$1.78	\$0.00	\$35.14
	08/28/2016	\$26.61	\$7.50	\$1.80	\$0.00	\$35.91
	09/03/2017	\$27.14	\$7.75	\$1.81	\$0.00	\$36.70
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$36.98	\$7.25	\$8.12	\$0.00	\$52.35
	08/28/2016	\$37.70	\$7.50	\$8.87	\$0.00	\$54.07
	09/03/2017	\$38.45	\$7.75	\$9.53	\$0.00	\$55.73
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$30.46	\$7.25	\$8.34	\$0.00	\$46.05
	08/28/2016	\$31.05	\$7.50	\$8.89	\$0.00	\$47.44
	09/03/2017	\$31.66	\$7.75	\$9.44	\$0.00	\$48.85
For apprentice rates see "Apprentice- LINEMAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$23.93	\$7.25	\$1.72	\$0.00	\$32.90
	08/28/2016	\$24.39	\$7.50	\$1.73	\$0.00	\$33.62
	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$36.98	\$7.25	\$12.29	\$0.00	\$56.52
	08/28/2016	\$37.70	\$7.50	\$12.95	\$0.00	\$58.15
	09/03/2017	\$38.45	\$7.75	\$13.61	\$0.00	\$59.81
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$32.63	\$7.25	\$9.05	\$0.00	\$48.93
	08/28/2016	\$33.26	\$7.50	\$9.63	\$0.00	\$50.39
	09/03/2017	\$33.92	\$7.75	\$10.21	\$0.00	\$51.88
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$23.93	\$7.25	\$1.72	\$0.00	\$32.90
	08/28/2016	\$24.39	\$7.50	\$1.73	\$0.00	\$33.62
	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$19.58	\$7.25	\$1.59	\$0.00	\$28.42
	08/28/2016	\$19.96	\$7.50	\$1.60	\$0.00	\$29.06
	09/03/2017	\$20.35	\$7.75	\$1.61	\$0.00	\$29.71
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2015	\$43.51	\$7.25	\$15.06	\$0.00	\$65.82
	08/28/2016	\$44.35	\$7.50	\$15.83	\$0.00	\$67.68
	09/03/2017	\$45.23	\$7.75	\$16.61	\$0.00	\$69.59

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 08/30/2015

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$26.11	\$7.25	\$3.28	\$0.00	\$36.64
2	65	\$28.28	\$7.25	\$3.35	\$0.00	\$38.88
3	70	\$30.46	\$7.25	\$3.41	\$0.00	\$41.12
4	75	\$32.63	\$7.25	\$4.98	\$0.00	\$44.86
5	80	\$34.81	\$7.25	\$5.04	\$0.00	\$47.10
6	85	\$36.98	\$7.25	\$5.11	\$0.00	\$49.34
7	90	\$39.16	\$7.25	\$7.17	\$0.00	\$53.58

Effective Date - 08/28/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$26.61	\$7.50	\$3.30	\$0.00	\$37.41
2	65	\$28.83	\$7.50	\$3.36	\$0.00	\$39.69
3	70	\$31.05	\$7.50	\$3.43	\$0.00	\$41.98
4	75	\$33.26	\$7.50	\$5.00	\$0.00	\$45.76
5	80	\$35.48	\$7.50	\$5.06	\$0.00	\$48.04
6	85	\$37.70	\$7.50	\$5.13	\$0.00	\$50.33
7	90	\$39.92	\$7.50	\$7.20	\$0.00	\$54.62

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$28.98	\$4.25	\$3.12	\$0.00	\$36.35
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$27.31	\$4.25	\$3.07	\$0.00	\$34.63
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$27.31	\$4.25	\$3.07	\$0.00	\$34.63
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$18.51	\$3.55	\$0.00	\$0.00	\$22.06
<p>This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground.</p> <p>This classification does not apply to wholesale tree removal.</p>						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$16.32	\$3.55	\$0.00	\$0.00	\$19.87

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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Additional Apprentice Information:

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

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

All steps are six months (1000 hours.)
Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.
*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.
**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

MASSACHUSETTS WEEKLY CERTIFIED PAYROLL REPORT FORM



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

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

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

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

Division of Labor and Industries Statement of Compliance

WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form is available from the Department of Labor Standards (DLS) at www.mass.gov/dols/pw and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

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

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

STATEMENT OF COMPLIANCE

_____, 20____

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

do hereby state:

That I pay or supervise the payment of the persons employed by

_____ on the _____
(Contractor, subcontractor or public body) (Building or project)

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

Signature _____
Title _____

GENERAL TERMS & CONDITIONS

General Conditions

GENERAL TERMS AND CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, RECONSTRUCTION, ALTERATION, REMODELING, OR REPAIR OF ANY PUBLIC BUILDING OR PUBLIC WORK IN THE CITY OF SOMERVILLE

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GENERAL TERMS AND CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, RECONSTRUCTION, INSTALLATION,

**DEMOLITION, MAINTENANCE, OR REPAIR OF ANY
PUBLIC BUILDING OR PUBLIC WORK
IN THE CITY OF SOMERVILLE**

ARTICLE 1: DEFINITIONS

1.1. In General.

1.1.1. Well-known meanings. When words or phrases that have a well-known technical, or construction industry, or trade meaning are used in the Contract Documents, such words or phrases shall be interpreted in accordance with that meaning, unless otherwise stated.

1.1.2. Capitalization. The words and terms defined in this Article are capitalized in these General Terms and Conditions of the Contract. Other capitalized words may refer to a specific document found in the Contract Documents.

1.1.3. Persons. Whenever the word person or persons is used, it includes, unless otherwise stated, entity or entities, respectively, including, but not limited to, corporations, partnerships, and joint venturers.

1.1.4. Singular and Plural. The following terms have the meanings indicated which are applicable to both the singular and the plural thereof.

1.2. Definitions.

1.2.1. Agreement. The Agreement is the written document between the **City** and the **Contractor** which is titled: Agreement between the City of Somerville and the Contractor, which is the executed portion of the Contract, and which forms a part of the Contract. The Agreement also includes all documents required to be attached thereto, including, but not limited to, the performance bond, the labor and materials or payment bonds, certificates of insurance, and all Modifications of the Agreement.

1.2.2. Change Order. A Change Order is a document which is signed by the **Contractor**, the **Design Professional**, and the **City**; which is directed to the **Contractor**; which authorizes the **Contractor** to make an addition to, a deletion from or a revision in the Work, or an adjustment in the Contract Sum or in the Contract Time; and which is issued on or after the date of the Agreement between the **Contractor** and the **City**.

1.2.3. City. The **City** refers to the City of Somerville, which is the owner of the Project and is the public awarding authority with whom the **Contractor** has entered into the Contract and for whom the Work is to be provided.

1.2.4. Claim. A Claim is a dispute, demand, or assertion by one of the parties arising out of or relating to the Contract for which such party is seeking relief.

1.2.5. Contract. The Contract consists of all the Contract Documents. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification to the Contract signed by both parties.

1.2.6. Contract Documents. The Contract Documents consist of the Agreement; the notice of award of the Contract; the Notice to Proceed; the entire Project Manual; Change Orders; Construction Change Directives; the **Contractor's** Bid and all accompanying documents; and the **Design Professional's** written interpretations and clarifications issued on or after the issuance of the Notice to Proceed. Shop Drawing submittals and reports or drawings utilized by the **Design Professional** in preparing the Contract Documents are not Contract Documents.

1.2.7. Contractor. The **Contractor** is the person who is awarded the Contract for the Project herein pursuant to M.G.L. c. 149, §44A or M.G.L. c. 39, §39M; and is identified in the Agreement as such. The term "**Contractor**" is intended to include the **Contractor** as well as its authorized representative(s).

1.2.8. Contract Sum. The Contract Sum is the total amount stated in the Agreement payable by the **City** to the **Contractor** for the completion of the Work in accordance with the Contract Documents.

1.2.9. Contract Time. Unless otherwise provided, the Contract Time is the number of days allotted in the Contract Documents or the dates stated in the Agreement, including authorized adjustments, for Substantial Completion. We usually put a contract end date that is beyond the date of substantial completion.

1.2.10. Coordination Drawings. Coordination Drawings are those drawings, which are prepared by the **Contractor** or a Subcontractor that show the exact alignment, physical locations, and configuration of the mechanical, electrical, and fire protection installations.

1.2.11. Day. The term "day" shall mean calendar day unless otherwise stated.

1.2.12. Design Professional. The **Design Professional** is the person lawfully licensed to practice architecture, engineering, or landscape architecture and has been selected by the **City** to administer the Contract. The term "**Design Professional**," while referred to in the singular, means the **Design Professional** and/or the **Design Professional's** representative. For the purposes of this project, **Design Professional** shall mean the firm of Weston Sampson Engineers and appropriate consultants.

1.2.13. Field Order. A Field Order is a written order issued by the **Design**

Professional which orders minor changes in the Work, but which does not involve a change in the Contract Sum or the Contract Time.

1.2.14. Final Completion. Final Completion is the point in time when the Design Professional finds that the Work has been fully completed in accordance with the Contract Documents. Final Completion shall be no later than thirty (30) days after Substantial Completion.

1.2.15. General Requirements. General Requirements refer to Sections of Division 1 of the Specifications.

1.2.16. Modification. A Modification is a written instrument that amends the Contract after execution of the Agreement.

1.2.17. Notice to Proceed. A Notice to Proceed is a written notice given by the **City**, or the **Design Professional**, to the **Contractor** fixing the date on which the Contract Time will begin to run and on which the **Contractor** shall start to perform its obligations under the Contract Documents.

1.2.18. Plans. The Plans are the drawings which are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location, dimensions, scope, extent, and character of the Work to be furnished and performed by the **Contractor** and which have been prepared or approved by the **Design Professional**.

1.2.19. Product Data. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the **Contractor** to illustrate materials or equipment for some portion of the Work. Product Data are not considered part of the Contract Documents.

1.2.20. Project. The Project is the total Work to be provided under the Contract Documents and may be the whole or a part as indicated elsewhere in the Contract Documents and may include construction by the **City** or by separate contractors. The Project is the Work described in the invitation to bid (advertisement) and Specifications and illustrated by the Plans, including any Modifications.

1.2.21. Project Manual. The Project Manual is the entire set of bidding documents which includes, but is not limited to, the invitation to bid (advertisement), the instructions to bidders, all of the forms, the wage rates, all City and state requirements, the General Terms and Conditions of the Contract, any supplementary conditions thereto, the Plans, the Specifications, and all addenda.

1.2.22. Proposed Change Order. A Proposed Change Order is a Change Order that has been submitted by the **Contractor** to the **Design Professional**, is under review, and has

not been approved by the **City**.

1.2.23. Samples. Samples are physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged. Samples are not considered part of the Contract Documents.

1.2.24. Shop Drawings. Shop Drawings are all drawings, diagrams, illustrations, schedules, and other information that are specifically prepared or assembled by or for the **Contractor** and submitted by the **Contractor** to illustrate some portion of the Work. Shop Drawings are not considered part of the Contract Documents.

1.2.25. Site. The Site is the location of the Project and of the Work.

1.2.26. Specifications. Specifications are those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

1.2.27. Subcontractor. A Subcontractor is a person who contracts directly with the **Contractor**, unless otherwise stated.

1.2.28. Submittals. Submittals are those Shop Drawings, Product Data, Samples, or any other required document that are provided to the Design Professional for review and approval.

1.2.29. Substantial Completion. Substantial Completion means that the Work has been completed and the Site or the facility is opened for full and intended public use, except for minor incomplete or unsatisfactory items that do not materially impair the usefulness of the Work. The **Design Professional** shall decide what constitutes “minor,” “incomplete,” “unsatisfactory,” and “materially” and the **Design Professional's** decision shall be final.

1.2.30. Sub-subcontractor. A Sub-subcontractor is a person who has contracted directly with a Subcontractor.

1.2.31. Supplier. A Supplier is a manufacturer, fabricator, distributor, material person, or vendor having a direct contract with the Contractor or with any Subcontractor to furnish materials or equipment to be incorporated into the Work by the Contractor or any Subcontractor.

1.2.32. Work. Work refers to the services and the entire completed construction or the various separately identifiable parts thereof required by the Contract Documents, including all labor, materials, and equipment furnished, furnished and incorporated into the

Project, or to be provided by the **Contractor** to fulfill the **Contractor's** obligations. The Work may constitute the whole or a part of the Project.

1.2.33. Construction Change Directive. A **Construction Change** Directive is a written directive to the **Contractor** ordering an addition to, a deletion from, or a revision to the Work issued on or after the date of the Agreement, signed by the **City**, and recommended by the **Design Professional**.

ARTICLE 2: ABOUT THE CONTRACT DOCUMENTS

2.1. Priority/Conflict.

2.1.1. Priority Among Contract Documents. In the event of conflict among the Contract Documents, the Contract Documents shall be construed according to the following priorities:

Highest Priority:	Modifications
Second Priority:	Agreement
Third Priority:	Addenda-later date to take precedence
Fourth Priority:	Supplementary General Conditions
Fifth Priority:	General Conditions
Sixth Priority:	Plans and Specifications

2.1.1.1. If there is a conflict between the Plans and Specifications, the figured dimensions shall govern over the scaled dimensions. Detailed Plans shall govern over the general Plans. Larger scale Plans shall take precedence over smaller scale Plans. Plans shall govern over Shop Drawings. Whenever notes, specifications, dimensions, details, or schedules in the Specifications or in the Plans, or between the Specifications and the Plans, or in all other instances not specifically noted above, the **Contractor** shall provide, unless otherwise directed by a Modification of the Contract, the better quality or greater quantity of Work at no increase in the Contract Sum or in the Contract Time.

2.1.1.2. Compliance with these priority conditions shall not justify any changes in the Work or any increase in the Contract Sum or Contract Time, unless any such compliance results in Work that may not be reasonably inferred from the Contract Documents as being required to produce the intended result as determined by the **Design Professional**.

2.1.2. Review of the Contract Documents and Field Conditions and Discovery of Conflict, Error, Ambiguity, or Discrepancy. Before starting the Work, and during the progress thereof, the **Contractor** shall carefully study and compare the Contract Documents with each other and with the information furnished by the **City** pursuant to Article 3 and shall

at once report to the **Design Professional** any error, inconsistency, or omission the **Contractor** may discover. Any necessary change shall be ordered as provided in Article 11, subject to the requirements of any other provisions of the Contract Documents. The **Contractor** shall not proceed with the Work affected thereby (except in an emergency) until a Modification has been issued. If the **Contractor** proceeds with the Work having discovered such errors, inconsistencies, or omissions contrary to the provisions contained herein, or if by reasonable study of the Contract Documents the **Contractor** could have discovered such, the **Contractor** shall bear all costs arising therefrom. The **Contractor** shall be liable to the **City** for failure to report any conflict, error, ambiguity, or discrepancy of which it knew or should have known.

2.1.3. Field Measurements. The **Contractor** shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the **Contractor** with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the **Design Professional** at once.

2.1.4. Statutory Provisions. The **City** and the **Contractor** recognize that other rights duties and obligations with respect to public construction contracts are provided for by statute, notwithstanding the fact that they may not be provided for in the Contract Documents. In case of conflict between the statutory provisions and other provisions of the Contract Documents and the provisions of any applicable statute, the statutory provisions shall govern.

2.1.5. Voided or Unlawful Provisions. In the event any provision in the Contract is voided or deemed unlawful, such provision shall be deleted without affecting the remainder of the Contract.

2.2. Execution.

2.2.1. Execution of the Agreement by the **Contractor** is a representation that the **Contractor** has visited the Site, become familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

2.3. Intent.

2.3.1. Entire Agreement. The Contract Documents comprise the entire agreement between the **City** and the **Contractor** concerning the Work. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the **Contractor**. The Contract Documents are complementary; what is required by one shall be as binding as if required by all. Performance by the **Contractor** shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. All Work mentioned or indicated in the Contract Documents shall be performed by the **Contractor** as part of this

Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others.

2.3.2. Statutory Provisions. Each and every provision of law, code, and regulation, required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion.

2.3.3. Functionally Complete Project. It is the intent of the Contract Documents to describe a functionally complete Project. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the **Contractor**. Any Work, materials, or equipment that may be reasonably inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed by the **Contractor** whether or not specifically called for in the Contract Documents.

2.3.4. Indications or Notations. All indications or notations which apply to one of a number of similar situations, materials, or processes shall be deemed to apply to all such situations, materials, or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

2.3.5. Standards or Quality of Materials or Workmanship. Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

2.3.6. Manufactured Products. All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

2.3.7. Mechanical, Electrical, and Fire Protection Plans. The mechanical, electrical, and fire protection Plans are diagrammatic only and are not intended to show the alignment, physical locations, or configurations of such Work. Such Work shall be installed without additional cost to the **City** to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the **Contractor** shall prepare Coordination Drawings and demonstrate to the **Design Professional's** satisfaction that the installations will comply with the preceding sentence. The **Contractor** shall be solely liable and responsible for any costs and/or delays resulting from the **Contractor's** failure to prepare such Coordination Drawings.

2.3.8. Locations of Fixtures and Outlets. Exact locations of fixtures and outlets shall be obtained from the **Design Professional** as provided in Article 5 before the Work is roughed in. Work installed without such information from the **Design Professional** shall be relocated at the **Contractor's** expense.

2.3.9. Tests. When test boring or soil test information are included with the Contract Documents or otherwise made available to the **Contractor** and such test boring or soil test information was obtained by the **City** for use by the **Design Professional** in the design of the Project or Work, the **City** does not hold out such information to the **Contractor** as an accurate or approximate indication of subsurface conditions, and no claim for extra cost of extension of time resulting from a reliance by the **Contractor** on such information shall be allowed except as otherwise provided herein. Any such reports are not part of the Contract Documents.

2.3.10. Joining Work. Where the Work is to fit with existing conditions or work to be performed by others, the **Contractor** shall fully and completely join the Work with such conditions or work, unless otherwise specified.

2.4. Organization.

2.4.1. Except as provided in M.G.L. c. 149, §44F, the organization of the Specifications into divisions, sections, and articles, and the arrangement of Plans shall not control the **Contractor** in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

2.5. References.

2.5.1. Where codes, manuals, specifications, standards, requirements and publications of public and private bodies are referred to in the Contract Documents whether specifically or by implication, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated. Where statutes are referred to in the Contract Documents whether specifically or by implication, references shall be understood to be to the latest revision.

2.5.2. References herein to particular paragraphs or Articles are solely to facilitate finding additional information with regard to the specific matters and are not to be construed in any way as limiting the possible paragraphs and Articles in which such matters may be found elsewhere in this document.

2.6. Reuse of Design Professional's Written Instruments.

2.6.1. Neither the **Contractor** nor any Subcontractor or Supplier shall have or acquire any title to or ownership rights in any of the Plans, Specifications, or other documents prepared by the **Design Professional** and shall not reuse any of such Plans, Specifications, or other documents without prior written consent of the **City** and the **Design**

Professional.

2.7. Written Material of the Contractor.

2.7.1. All written material prepared or collected by the **Contractor** in the course of completing the Work shall be the exclusive property of the **City** and shall not be used by the **Contractor** for any purpose other than the purpose of this Contract.

2.8. Modifying Words.

2.8.1. In the interest of simplicity, modifying words such as “all” and “any” may be omitted, but the fact that such words may be absent from one sentence and appear in another is not intended to affect the interpretation of either statement.

2.9. Use of Certain Words and Terms.

2.9.1. Whenever in the Contract Documents the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the **City** or of the **Design Professional** as to the Work, it is intended that such requirement, direction, review, or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise).

2.9.2. The use of any such term or adjective shall not be effective to change the duties and responsibilities of the **City** or the **Design Professional** from those assigned in the Contract Documents or to assign any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

2.9.3. When the words “Contractor,” “Subcontractor,” “Sub-subcontractor,” and “Supplier” are used, they are intended to include their employees and agents, unless otherwise specified.

2.10. Modification of the Contract Documents.

2.10.1. Major Modifications. Major Modifications may affect the Contract Sum or the Contract Time. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways, all of which must contain a written endorsement by the **City**:

2.10.1.1. a formal written amendment;

2.10.1.2. a Change Order;

2.10.1.3. a **Construction Change** Directive; or

2.10.1.4. the **Design Professional's** written interpretation, clarification, or decision.

2.10.2. Minor Modifications. Minor modifications do not affect the Contract Sum or the Contract Time. The requirements of the Contract Documents may be supplemented and minor variations and deviations of the Work may be authorized in one or more of the following ways:

2.10.2.1. a Field Order; or

2.10.2.2. the **Design Professional's** approval of a Shop Drawing or Sample.

ARTICLE 3: THE CITY

3.1. Signatory.

3.1.1. All documents which require a signature or an endorsement by the **City** must be signed by the Mayor in order to be deemed ratified by the **City**.

3.2. Requirements to Provide Documents.

3.2.1. To the extent they are available, the **City** shall furnish surveys describing physical characteristics, legal limitations, and utility locations for the site of the Project, and a legal description of the Site.

3.2.2. The **City** shall obtain and pay for necessary approvals, easements, assessments, and charges that are customarily secured prior to the execution of the Contract.

3.2.3. The **City** shall furnish information or services required of the **City** hereunder with reasonable promptness after receipt from the **Contractor** of a written request for such information or services.

3.2.4. The **City** shall provide the **Contractor**, at no charge, such copies of the Project Manual as are reasonably necessary for the execution of the Work.

3.3. Clerk of the Works.

3.3.1. The **City** may engage a Clerk of the Works for this Project, in which case the **City** shall, upon request of the **Contractor**, provide the **Contractor** with a written statement of the duties, responsibilities, and limitations of authority of such Clerk of the Works. Except as expressly set forth in such written statement, the Clerk of the Works shall have no authority to approve Work, to approve Change Orders, or to exercise any of the power and authority of the **City** or the **Design Professional**. The Clerk of the Works shall observe the **Contractor's** operations and construction activities for compliance with the Plans and Specifications. The Clerk of the Works shall have access to all areas of the Project at all times. The **Contractor**

shall fully cooperate with the Clerk of the Works in the performance of the Clerk's duties.

3.4. City's Right to Perform Construction and to Award Separate Contracts.

3.4.1. The **City** reserves the right to perform construction or operations at the Site with its own forces or others. If the **Contractor** claims that a delay or additional cost is involved because of such action by the **City**, the **Contractor** shall make such Claim as provided elsewhere in the Contract Documents.

3.4.2. When the separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "**Contractor**" in the Contract Documents in each case shall mean the **Contractor** who executes each separate City-Contractor Agreement.

3.4.3. The **City** shall provide for coordination of the activities of the **City's** own forces and of each separate contractor with the Work of the **Contractor**, who shall cooperate with them. The **Contractor** shall afford each other person access to the Site and shall properly coordinate its Work with that of the persons performing other work. The **Contractor** shall participate with other separate contractors and the **City** in reviewing their construction schedules when directed to do so. The **Contractor** shall make any revisions to the construction schedules deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the **Contractor**, separate contractors, and the **City** until subsequently revised.

3.5. Limitations on the City's Responsibilities.

3.5.1. The **City** shall not supervise, direct, or have control or authority over, nor be responsible for the **Contractor's** means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the **Contractor** to comply with laws, codes and regulations applicable to the furnishing or performance of the Work. The **City** will not be responsible for the **Contractor's** failure to perform or furnish the Work in accordance with the Contract Documents. The **City** is not responsible for the acts or omissions of the **Contractor**, any Subcontractor, Supplier, or anyone for whose acts the **Contractor**, any Subcontractor or Suppliers may be liable.

3.5.2. The **City's** authority to review any of the **Contractor's** progress schedules, or its decision to raise or not to raise any objections about such schedules shall not impose on the **City** any responsibility for the timing, planning, scheduling, or execution of the Work, nor in any way give rise to any duty or responsibility on the part of the **City** to exercise this authority for the benefit of the **Contractor**, any Subcontractor or Supplier or any other party.

3.5.3. The **City's** decision to raise or not to raise objections with regard to any aspects of the **Contractor's** insurance shall in no way give rise to any duty or responsibility on the part of the **City** to or for the benefit of the **Contractor**, any Subcontractor, any Supplier, or any other party.

3.6. Reservation of Rights.

3.6.1. The **City** reserves the right to correct at any time any error in any progress payment that may have been made.

3.6.2. Should defective Work be discovered subsequent to final payment, the **City** reserves the right to make a claim and recover all costs and professional fees associated therewith, including the cost of removing and/or replacing the defective Work.

3.7. Waivers.

3.7.1. All waivers by the **City** are valid only to the extent that they are signed by the **City**. Any such waivers pertain only to the specific matter contained in the waiver and not to any similar, subsequent matters.

ARTICLE 4: THE DESIGN PROFESSIONAL

4.1. City's Representative.

4.1.1. The **Design Professional** is the **City's** representative (1) during construction, (2) until final payment is due, and (3) with the **City's** concurrence, from time to time during the correction period described in Article 10. The **Design Professional** will advise and consult with the **City**. The **Design Professional** will have authority to act on behalf of the **City** only to the extent provided in the Contract Documents, unless otherwise modified by a written instrument in accordance with other provisions of the Contract.

4.1.2. The duties, responsibilities, and the limitations of authority of the **Design Professional** as the **City's** representative during construction are set forth in the Contract Documents and shall not be extended without the written consent of the **City** and the **Design Professional**.

4.2. Administration of the Contract.

4.2.1. The **Design Professional** will provide administration of the Contract as described in the Contract Documents, unless the **City** has engaged a construction manager.

4.3. Visits to the Site.

4.3.1. The **Design Professional** will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the **Design Professional** will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of on-site observations as an architect, engineer, or landscape architect, the **Design Professional** will keep the **City** informed of progress of the Work in writing and will endeavor to guard the **City** against defects and deficiencies in the Work.

4.4. Communications Facilitating Contract Administration.

4.4.1. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the **City** and the **Contractor** shall endeavor to communicate through the **Design Professional**. Communications by and with the **Design Professional's** consultants shall be through the **Design Professional**. Communications by and with Subcontractors and Suppliers shall be through the **Contractor**. Communications by and with **City** employees and separate contractors shall be through the **City**.

4.4.2. When it deems it necessary or expedient, the **City** may communicate directly with the **Contractor**, any Subcontractors, Suppliers, or consultants.

4.5. Certification of Applications for Payment.

4.5.1. Based on the **Design Professional's** observations and evaluations of the **Contractor's** applications for payment, the **Design Professional** will review and certify the amounts due the **Contractor** and will issue certificates for payment in such amounts.

4.6. Rejection of Work.

4.6.1. The **Design Professional** will have authority to reject or disapprove Work (1) that does not conform to the Contract Documents; (2) that the **Design Professional** believes to be defective; and (3) that the **Design Professional** believes will not produce a completed Project conforming to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Whenever the **Design Professional** considers it necessary or advisable for implementation of the intent of the Contract Documents, the **Design Professional** will have authority to require additional inspection or testing of the Work in accordance with Article 9, whether or not such Work is fabricated, installed, or completed. However, neither this authority of the **Design Professional** nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the **Design Professional** to the **Contractor**, Subcontractors, Suppliers, or other persons performing portions of the Work.

4.7. Review of Submittals.

4.7.1. The **Design Professional** will review or take other appropriate action upon the **Contractor's** submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents and only to the extent that the **Design Professional** believes desirable to protect the **City's** interest. The **Design Professional's** action will be taken with reasonable promptness, while allowing sufficient time in the **Design Professional's** professional judgment to permit adequate review, taking into account the time periods set forth in the latest schedule prepared by the **Contractor** and approved by the **Design Professional**. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of

the **Contractor** as required by the Contract Documents. The **Design Professional's** review of the **Contractor's** submittals shall not relieve the **Contractor** of the obligations under Article 5. The **Design Professional's** review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The **Design Professional's** approval of a specific item shall not indicate approval of an assembly of which the item is a component. After the rejection of the second resubmittal of any one Submittal, the **Contractor** shall bear the cost of the review of each subsequent resubmittal.

4.8. Preparation of Change Orders and Construction Change Directives.

4.8.1. The **Design Professional** will prepare Change Orders and **Construction Change Directives** and may authorize minor Modifications in the Work as provided in Article 11.

4.9. Inspections.

4.9.1. The **Design Professional** will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; will receive and forward to the **City** for the **City's** review and records written warranties and related documents required by the Contract and assembled by the **Contractor**; and will issue a final certificate for payment upon the **Contractor's** compliance with all of the requirements of the Contract Documents.

4.10. Interpretations, Clarifications, and Decisions.

4.10.1. The **Design Professional** will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the **City** or the **Contractor**. The **Design Professional's** response to such requests will be made with reasonable promptness and within the time set forth in the Agreement between the **City** and the **Design Professional**. Any such written interpretations, clarifications, and decisions shall be binding on the **Contractor**.

4.10.2. Interpretations, clarifications, and decisions of the **Design Professional** will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. The **Design Professional** will not be liable to the **Contractor**, any Subcontractor, or Supplier for results of interpretations, clarifications, or decisions so rendered in good faith.

4.10.3. The **Design Professional** may, as the **Design Professional** judges desirable, issue additional drawings or instructions indicating in greater detail the construction or design of the various parts of the Work; such drawings or instructions may be effected by a Field Order or other notice to the **Contractor**, and provided such drawings or instructions are reasonably consistent with the previously existing Contract Documents, the Work shall be executed in accordance with such additional drawings or instructions without any additional cost or an extension of the Contract Time.

4.10.4. The **Design Professional's** decisions on matters relating to aesthetic effect must

be consistent with the **City's** and will be final.

4.11. Limitation on the Design Professional's Responsibilities.

4.11.1. Neither the **Design Professional's** authority to act under the provisions of the Contract Documents nor any decision made by the **Design Professional** in good faith to exercise or not to exercise such authority shall give rise to any duty or responsibility of the **Design Professional** to the **Contractor**, any Subcontractor, any Supplier, any surety for any of them or any other person.

4.11.2. The **Design Professional** will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the **Contractor's** responsibility as provided in Article 5. The **Design Professional** will not be responsible for the **Contractor's** failure to carry out the Work in accordance with the Contract Documents. The **Design Professional** will not have control over or charge of and will not be responsible for acts or omissions of the **Contractor**, Subcontractors, Suppliers, or of any other persons performing portions of the Work.

ARTICLE 5: THE CONTRACTOR

5.1. Relationship with the City.

5.1.1. The **Contractor** is an independent contractor and not an employee of the **City**. The **Contractor** is engaged by virtue of the Contract to perform only those services contained therein. The **Contractor** is not authorized to contract on behalf of the **City** or to incur any liability on the part of the **City**.

5.2. Code of Conduct.

5.2.1. M.G.L. c. 268A establishes standards of conduct for officials and employees of the **City**. The **Contractor** shall familiarize itself with the statute and act accordingly.

5.3. Quality Assurance.

5.3.1. The **Contractor** shall be responsible for ensuring that it, all Subcontractors, Suppliers, and all persons employed to do the Work under the Contract Documents perform in a professional manner, provide a high quality of service and Work, and perform in accordance with the Contract Documents.

5.4. Supervision.

5.4.1. Competence and Efficiency. The **Contractor** shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills, attention and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

5.4.2. Construction Means, Methods, Techniques, Etc. The **Contractor** shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Contract. Where the Contract Documents refer to particular construction means, methods, techniques, sequences, or procedures or indicate or imply that such are to be used in the Work, such mention is intended only to indicate that the operations of the **Contractor** shall be such as to produce at least the quality of Work implied by the operations described. The actual determination of whether or not the described operations may be safely and suitably employed on the Work shall be the responsibility of the **Contractor**, who shall notify the **Design Professional** in writing, prior to implementation, of the actual means, methods, techniques, sequences, or procedures which will be employed on the Work, if these differ from those mentioned in the Contract Documents. All loss, damage, liability or cost of correcting defective work arising from the employment of any construction means, methods, techniques, sequences, or procedures shall be borne by the **Contractor**, notwithstanding that such construction means, methods, techniques, sequences, or procedures are referred to, indicated or implied by the Contract Documents, unless the **Contractor** has given timely notice to the **City** and the **Design Professional** in writing that such means, methods, techniques, sequences, or procedures are not safe or suitable, and the **City** has then instructed the **Contractor** in writing to proceed at the **City's** risk.

5.4.3. Variance between the Contract Documents and Statutes, Ordinances, Codes, Rules, and Regulations. The **Contractor** shall promptly notify the **Design Professional** and the **City** in writing of any variances between the Contract Documents and statutes, ordinances, codes, rules, and regulations. If the **Contractor**, without written notice to the **Design Professional** and the **City**, performs Work knowing that it is contrary to statutes, ordinances, codes, rules, and regulations, the **Contractor** shall assume full responsibility for such Work and shall bear the costs associated therewith, i.e., replacement, repairs, removal, and fines.

5.4.4. Acts and Omissions. The **Contractor** shall be responsible to the **City** for the acts and omissions of all persons performing or supplying the Work.

5.4.5. Inspections. The **Contractor** shall be responsible for inspection of portions of Work already performed under this Contract to determine whether such portions are in proper condition to receive subsequent Work.

5.5. Personnel.

5.5.1. Suitability. The **Contractor** shall provide competent, properly licensed and/or certified, suitably qualified, and reliable personnel to perform the Work required by the Contract Documents. The **Contractor** shall enforce strict discipline and maintain good order at the site at all times. The **Contractor** shall not employ any Subcontractor, Supplier, or other person, whether initially or as a substitute, against whom the **City** may have reasonable objection. Acceptance of any Subcontractor or other person by the **City** shall not constitute a waiver of any

right of the **City** to reject defective Work.

5.5.2. Sexual Harassment. Sexual harassment is an unlawful practice under M.G.L. c. 151B. The **Contractor**, Subcontractors, and all other persons responsible for any portion of the Work shall refrain from engaging in sexual harassment. The **Contractor** shall be responsible for any acts of sexual harassment committed by any persons responsible for any portion of the Work. The **Contractor** shall take appropriate action against any such individuals.

5.5.3. Weapons and Illegal Drugs. No weapons or illegal drugs are permitted on the Site. It is the responsibility of the **Contractor** to ensure that no weapons or illegal drugs are brought to the Site.

5.5.4. Maximum Work Day and Work Week. (*Reference:* M.G.L. c. 149, §§30 and 34;). No laborer, worker, mechanic, foreperson or inspector working within this Commonwealth in the employ of the **Contractor**, Subcontractor or other person doing or contracting to do the whole or part of the work contemplated by the Contract, shall be required or permitted to work more than eight (8) hours in any one day or more than forty-eight (48) hours in any one week, or more than six (6) days in any one week, except in cases of emergency.

5.5.5. Lodging. (*Reference:* M.G.L. c. 149, §25;). Every employee under this Contract shall lodge, board and trade where and with whom he or she elects, and neither the **Contractor** nor its agents or employees shall, either directly or indirectly, require as a condition of the employment of any person that the employee shall lodge, board or trade at a particular place or with a particular person.

5.5.6. Wage Rates. (*Reference:* M.G.L. c. 149, §27). Mechanics and apprentices, teamsters, chauffeurs and laborers performing Work shall be paid no less than the minimum rate of wages included in the bid documents and the Project Manual and which are made part of the Contract. They shall continue to be the minimum rate of wages for said employees during the life of the Contract. The **Contractor** shall keep a legible copy of the wage rates posted in a conspicuous place at the site during the life of the Contract. These rates of wages shall include payments by employers to health and welfare plans, pension plans and supplementary unemployment benefit plans as provided in M.G.L. c. 149, §26;, and such payments shall be considered as payments to persons under M.G.L. c. 149, §27 performing work as therein provided. If the **Contractor** does not make payments to a health and welfare plan, a pension plan and a supplementary unemployment benefit plan, where such payments are included in the rates of wages, the **Contractor** shall pay the amount of said payments directly to each employee engaged in the Work. If the **Contractor** pays less than the rate of wages, including payments to health and welfare funds and pension funds, or the equivalent payments in wages to any person performing Work within the classifications as determined by the Commissioner of Labor and Industries, and if the **Contractor** takes or receives for its own use or the use of any other person, as a rebate, refund or gratuity, or in any other guise, any part or portion of the wages, including payments to health and welfare funds and pension funds, or the equivalent payment in wages,

paid to such person for Work done or service rendered on the Project, the **Contractor** will be subject to the penalties set forth in M.G.L. c. 149, §27. Notwithstanding the foregoing and the requirements of 5.5.7.1 and 5.5.7.2 below, if the Contract is federally funded, federal labor standards apply, including Davis Bacon minimum wage rates and payroll reporting requirements. See the “Federal Requirements” section at the end of these contract documents.

5.5.7. Payroll Records of Employees. (*Reference:* M.G.L. c. 149, §27B;). The **Contractor** and all Subcontractors who are subject to M.G.L. c. 149, §§27 and 27A shall keep a true and accurate record of all mechanics and apprentices, teamsters, chauffeurs, and laborers performing Work showing the name, address and occupational classification of each such employee, the hours worked by and the wages paid to all such employees. The **Contractor** and the Subcontractors shall submit a copy of said record to the **City** on a weekly basis.

5.5.7.1. (*Reference:* M.G.L. c. 149, §27B;). The **Contractor** and all Subcontractors who are subject to M.G.L. c. 149, §§27 and 27A shall preserve their payroll records for a period of three (3) years from the date of completion of the Contract.

5.5.7.2. (*Reference:* M.G.L. c. 149, §27B). The **Contractor** and all Subcontractors who are subject to M.G.L. c. 149, §§27 and 27A shall furnish to the Commissioner of Labor and Industries and the **City** within fifteen (15) days after completion of their portion of the Work a statement executed by the **Contractor** or Subcontractor or by any authorized officer or employee of the **Contractor** or Subcontractor who supervises the payment of wages in the form found in M.G.L. c.149, §27B.

5.6. Superintendence.

5.6.1. Employment of a Superintendent. The **Contractor** shall employ a competent, properly licensed superintendent, reasonably acceptable to the **City**, and necessary assistants who shall be in attendance at the Site full time during the progress of the Work until the date of Substantial Completion and for such additional time thereafter as the **Design Professional** or the **City** may determine to be necessary for the expeditious completion of the Work, including final completion. If continually in the employ of the Contractor, the same Superintendent shall be assigned to this project.

5.6.2. Removal/Replacement of a Superintendent. The **Contractor** shall remove the superintendent if requested to do so in writing by the **City** and shall promptly replace such superintendent with a competent person reasonably acceptable to the **City**. The superintendent shall represent the **Contractor**, and communications given to the superintendent shall be as binding as if given to the **Contractor**. The **Contractor** shall not replace the superintendent without written notice to the **City** and the **Design Professional**.

5.6.3. Registered Professional Engineer or Registered Land Surveyor. The **Contractor** shall retain a competent Registered Professional Engineer or Registered Land

Surveyor, acceptable to the **Engineer**, who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the site and shall establish sufficient lines and grades for the construction of associated Work such as, but not limited to, roads, utilities, and site grading. The Engineer or Land Surveyor shall certify as to the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries.

5.6.4. Building Grades, Lines, Etc.; The **Contractor** shall establish the building grades; lines; levels; and column, wall and partition lines required by the various Subcontractors in laying out their Work.

5.6.5. Coordination and Supervision. The **Contractor** shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The **Contractor** and all Subcontractors shall at all times afford each trade, any separate contractor, or the **City**, every reasonable opportunity for the installation of Work and the storage of materials.

5.6.6. Job Meetings. There shall be job meetings held on a weekly basis, or more often if required by the **City**. The **Contractor** shall arrange for and attend weekly job meetings with the **Design Professional** and such other persons as the **Design Professional** may from time to time wish to have present. The **Contractor** shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the **Contractor's** own superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is requested by the **Design Professional**. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, Change Orders, time schedules and workforce power. Any notices required under the Contract may be served on such representatives.

5.7. Materials, Labor, Equipment, Etc.

5.7.1. Provision of. Unless otherwise provided in the Contract Documents, the **Contractor** shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the Work.

5.7.2. Quality and Use of. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by the **Design Professional**, the **Contractor** shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

5.7.3. Discrepancies or Defects. If the **Contractor** is unable to perform its Work because of discrepancies or defects in the work of the **City's** own forces or of a separate contractor, the **Contractor** shall immediately notify the **Design Professional** and the **City** in writing of the conditions that render unable to so perform. Failure to notify the **Design Professional** constitutes an acknowledgment and acceptance of the other work as being fit and proper for integration with the **Contractor's** Work except for latent or non-apparent defects and deficiencies in the other work.

5.8. Contractor's Management and Financial Statement Requirements. (Reference: M.G.L. c. 30, §39R)

5.8.1. The words defined herein shall have the meaning stated below whenever they appear in this Paragraph:

5.8.1.1. “Contractor” means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to M.G.L. c.149, §44A-H or M.G.L. c. 30, §39M, inclusive.

5.8.1.2. “Contract” means any contract awarded or executed pursuant to M.G.L. c. 149, §44A-H or M.G.L. c. 30, §39M, which is for an amount or estimate amount that exceed the dollar amount set forth in M.G.L. c. 30, §39R.

5.8.1.3. “Records” means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.

5.8.1.4. “Independent Certified Public Accountant” means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his/her residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant’s independence shall not be confined to the relationships existing in connection with the filing of reports with the **City**.

5.8.1.5. “Audit,” when used in regard to financial statement, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.

5.8.1.6. “Accountant’s Report,” when used in regard to financial statements, means a document in which an independent certified accountant indicates the scope of the audit which s/he has made and sets forth his/her opinion regarding the financial statements taken as a whole with listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefore shall be stated. An accountant’s report shall include as part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.

5.8.1.7. “Management,” when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the Contractor.

5.8.1.8. Accounting terms, unless otherwise defined herein shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

5.8.2. The Contractor shall make, and keep for at least six (6) years after final payment, books, Records, and accounts that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.

5.8.3. Until the expiration of six (6) years after final payment, the Office of the Inspector General, and the Deputy Commissioner of the Division of Capital Asset Management shall have the right to examine any books, documents, papers or Records of the Contractor or of its Subcontractors that directly pertain to, and involve transactions relating to, the Contractor or its Subcontractors.

5.8.4. The Contractor shall describe any change in the method of maintaining Records or recording transactions which materially affect any statements filed with the **City**, including in its description the date of the change and reasons therefore, and shall accompany said description with a letter from the Contractor’s Independent Certified Public Accountant approving or otherwise commenting on the changes.

5.8.5. The Contractor shall file a Statement of Management on internal accounting controls as set forth below prior to the execution of the Contract.

5.8.6. The Contractor shall file prior to the execution of the contract and shall continue to file annually, an Audited Financial Statement for the most recent completed fiscal year as set forth below.

5.8.7. The Contractor shall file with the **City** a Statement of Management as to whether

the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:

5.8.7.1. transactions are executed in accordance with Management's general and specific authorization;

5.8.7.2. transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles, and to maintain accountability for assets;

5.8.7.3. access to assets is permitted only in accordance with Management's general or specific authorization; and

5.8.7.4. the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any difference.

5.8.7.5. The Contractor shall also file with the **City** a statement prepared and signed by an Independent Certified Public Accountant stating that s/he has examined the Statement of Management on internal accounting controls, and expressing an opinion as to:

5.8.7.5.1. whether the representation of Management in response to this paragraph and paragraphs 5.8.2. through 5.8.6 above are consistent with the result of Management's evaluation of the system of internal accounting controls; and

5.8.7.5.2. whether such representations of Management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.

5.8.8. The Contractor shall annually file with the Commissioner of the Division of Capital Asset Management during the term of the contract a financial statement prepared by an Independent Certified Public Accountant on the basis of an Audit by such accountant. The final statement filed shall include the date of final payment. All statements shall be accompanied by an accountant's report. Such statements shall be made available to the **City** upon request.

5.9. Taxes.

5.9.1 The **Contractor** shall pay all sales, consumer, use, and other similar taxes for the Work or portions thereof which are provided by the **Contractor** which are legally enacted when bids are received, whether or not yet effective or merely scheduled to go into effect. However, the **Contractor** shall not pay, and the **City** shall not reimburse or pay the **Contractor** for, any

sales taxes for building supplies or materials for which an exemption is provided in M.G.L. c. 64H, §6(f). The **City's** tax exemption number to be used by the **Contractor** in this regard is E04-600-1414.

5.10. Permits, Licenses, and Fees.

5.10.1 Unless otherwise provided, the **Contractor** shall obtain and pay the fees for all permits, licenses, and inspections that are necessary for the proper execution and completion of the Work and which are customarily secured after execution of the Contract and which are legally required. All fees for permits, and inspections required by any **City** department shall be waived. Fees for licenses (e.g. drainlayer's license) are not waived. In addition the contractor shall pay for water meters and water usage. The contractor is responsible for obtaining NSTAR work orders and paying all costs and fees associated with NSTAR work.

5.11. Notices Required By Statutes, Ordinances, Codes, Rules, Regulations, and Orders of the City.

5.11.1 The **Contractor** shall give notices required by statutes, ordinances, codes, rules, regulations, and orders of the **City** bearing on performance of the Work.

5.12. Additional Information from Design Professional.

5.12.1. The **Contractor** shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Article 4.

5.12.2. The **Contractor** shall give the **Design Professional** timely notice of any additional Plans, Specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.

5.12.3. The **Contractor** shall not proceed with any Work not clearly and consistently defined in detail in the Contract Documents, but shall request additional drawings or instructions from the **Design Professional** as provided in the previous Paragraph. If the **Contractor** proceeds with such Work without obtaining further drawings, Specifications, or instructions, the **Contractor** shall correct Work incorrectly done at the **Contractor's** own expense.

5.13. "Or equal."

5.13.1. Requirements for Substitutions. (*Reference: M.G.L. c. 30, §39M(b).*) Where products or materials are prescribed by manufacturer name, trade name, or catalog reference, the words "or approved equal" shall be understood to follow. An item shall be considered equal to the item so named or described if, in the opinion of the **Design Professional**:

5.13.1.1. it is at least equal in quality, durability, appearance, strength, and design;

5.13.1.2. it performs at least equally the function imposed by the general design for the Work;

5.13.1.3. it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the Specifications.

5.13.2. Net Savings. No proposed substitution will be permitted unless the **Contractor** certifies that the proposed substitution will yield a net savings to the **City** and will not extend the Contract Time.

5.13.3. Contractor's Expense. Any structural or mechanical changes made necessary to accommodate substituted equipment under this paragraph (including but not limited to engineering fees) shall be at the expense of the **Contractor** or **Subcontractor** responsible for the Work item.

5.13.3.1. Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the **Contractor**, notwithstanding approval or acceptance of such substitution by the **City** or the **Design Professional**, unless such substitution was made at the written request or direction of the **City** or the **Design Professional**.

5.13.3.2. All data to be provided by the **Contractor** in support of any proposed "or equal" or substitute item will be at the **Contractor's** expense.

5.13.4. Meeting Requirements. The **Contractor** shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The **Design Professional** may require the **Contractor** to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the **Design Professional**, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the **Contractor's** expense. This provision shall not require the **Contractor** to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the **Contractor's** expense.

5.13.5. Named Manufacturer's Product. In all cases in which a manufacturer's name, trade name, or other proprietary designation is used in connection with materials or articles to be furnished under this Contract, whether or not the phrase "or equal" is used after such name, the **Contractor** shall furnish the product of the name manufacturer(s) without substitution, unless a written request for a substitute has been submitted by the **Contractor** and approved in writing by the **Design Professional** as provided in the following paragraph.

5.13.6. Deviations. If the **Contractor** proposes to use a material which while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the **Contractor** shall inform the **Design Professional** in writing of the nature of such deviations

at the time the material is submitted for approval and shall request written approval of the deviation from the requirements of the Contract Documents.

5.13.7. Rejection of Deviations. In requesting approval of deviations or substitutions, the **Contractor** shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the **Design Professional**, the evidence presented by the **Contractor** does not provide a sufficient basis for such reasonable certainty, the **Design Professional** may reject such substitution or deviation without further investigation.

5.13.8. Consistent Character and Quality of Design. The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the Project. The **Design Professional** shall judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The **Design Professional** will not approve as equal to materials specified proposed substitutes that, in the **Design Professional's** opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the Project. In order to permit coordinated design of color and finishes the **Contractor** shall, if required by the **Design Professional**, furnish the substituted material in any color, finish, texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the **City**.

5.13.9. Warranty. The warranties provided herein shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

5.13.10. Design Professional's Approval. The **Design Professional** will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed, or utilized without the **Design Professional's** prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. The **City** may require the **Contractor** to furnish at the **Contractor's** expense a special performance guarantee or other surety with respect to any "or equal" or substitute. The **Design Professional** will record the time required by the **Design Professional** and its consultants in evaluating substitutes proposed or submitted by the **Contractor** and in making changes in the Contract Documents (or in the provisions of any other direct contract with the **City** for work on the Project) occasioned thereby. Whether or not the **Design Professional** accepts a substitute item so proposed or submitted by the **Contractor**, the **Contractor** shall reimburse the **City** for the charges of the **Design Professional** and its consultants for evaluating each such proposed substitute item.

5.14. Substitute Construction Methods or Procedures.

5.14.1 If a specific means, method, technique, sequence, or procedure of construction is

shown or indicated in and expressly required by the Contract Documents, the **Contractor** may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to the **Design Professional**. The **Contractor** shall submit sufficient information to allow the **Design Professional**, in the **Design Professional's** sole discretion, to determine whether the substitute proposed is equivalent to that expressly called for by the Contract Documents.

5.15. Contractor's Progress Schedule.

5.15.1. Before Starting Construction. Within ten (10) days after the date of the Notice to Proceed, the **Contractor** shall submit to the **Design Professional** for review:

5.15.1.1. a preliminary progress schedule indicating the times (number of days or dates) for starting and completing the various stages of the Work;

5.15.1.2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

5.15.1.3. a refined schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Sum and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

5.15.2. Review of Progress Schedule. At least ten (10) days prior to the commencement of construction, the **Design Professional**, the **Contractor**, and any other appropriate persons will meet to review and discuss the acceptability to the **Design Professional** of the progress schedule. The **Contractor** will have an additional ten (10) days to make corrections and adjustments and to complete and resubmit the schedule. No progress payment shall be made to the **Contractor** until the schedule is submitted to and found acceptable by the **Design Professional** as provided below.

5.15.3. Acceptability of Progress Schedule. The progress schedule will be acceptable to the **Design Professional** if, according to the **Design Professional**, it provides an orderly progression of the Work to completion within any specified time frame, but such acceptance will neither impose on the **Design Professional** responsibility for the sequencing, scheduling, or progress of the Work nor interfere with or relieve the **Contractor** from the **Contractor's** full responsibility therefore. The **Contractor's** schedule of Submittals must be acceptable to the **Design Professional** in providing a workable arrangement for reviewing and processing the required Submittals. The **Contractor's** schedule of values must be acceptable to the **Design Professional** as to form and substance.

5.15.4. Sepia and Copies. After the **Design Professional** has approved the schedule, the

Contractor shall submit to the **Design Professional** one (1) sepia and four (4) copies bearing the **Contractor's** stamp of approval as a representation to the **City** that the **Contractor** has determined or verified all data on that progress schedule and that the **Contractor**, the Subcontractors and Suppliers have reviewed and coordinated the sequences in that progress schedule with the requirements of the Work.

5.15.5. Adjustment of Schedule. The **Contractor** shall adhere to the established progress schedule which may be adjusted from time to time as follows: the **Contractor** shall submit to the **Design Professional** for acceptance proposed adjustments in the progress schedule that will not change the Contract Time. Such adjustments will conform generally to the progress schedule then in effect and will comply with any provisions of the requirements applicable thereto.

5.15.6. During Construction. The **Contractor** shall submit monthly progress schedules to the **Design Professional**. The schedules shall stay current with the **Contractor's** approach to the Work remaining.

5.15.7. Schedule of Submittals. The **Contractor** shall prepare and keep current, for the **Design Professional's** approval, a schedule of Submittals that is coordinated with the **Contractor's** construction schedule and allows the **Design Professional** reasonable time to review Submittals.

5.16. Project Coordination.

5.16.1. In General. The **Contractor** shall be responsible for the proper coordination of the Work of all of the trades.

5.16.2. Coordination with Subcontractors. The **Contractor** shall coordinate the work of each Subcontractor with the Work of every other Subcontractor whose Work affects the other.

5.16.3. Coordination with the City's Own Forces or Separate Contractors. The **Contractor** shall coordinate its operations with those of the **City's** own forces or separate contractors. The **Contractor** shall provide the **City's** own forces and separate contractors a reasonable opportunity for the handling, unloading and storage of their materials and equipment and execution of their work. The **Contractor** shall connect and coordinate its Work with theirs.

5.16.4. Coordination with Utility Companies. The **Contractor** shall coordinate its operations with all the appropriate utility companies to assure that the utilities required on the Project are available and functioning properly pursuant to the requirements of the Contract Documents.

5.17. Project Photographs.

5.17.1. In General. The **Contractor** shall take, at its own expense, interior and exterior

photographs at the site, from different vantages as directed by the **Design Professional** or the **City**, before beginning any Work and thereafter, at a minimum, on the first work day of each month until final completion of the Work, including final Site photos. Photos shall be taken of any Work that will be buried or concealed while the Work is still exposed. The photographs shall be taken by a skilled commercial photographer. The number of photographs required shall be at the discretion of the **City** or the **Design Professional**. One aerial photo shall be required a) prior to commencement of the work and b) at the completion of the work. See Section 01320 – Construction Progress Documentation.

5.17.2. Prints and Digital Media. Within fourteen (14) days after the photographs have been taken, the **Contractor** shall cause prints to be made and delivered to the **City** and the **Design Professional**. All photographs shall be 8" x 10". Each print shall state the date of the photograph, the name of the Project, the description of the view and the name and address of the photographer. The **City** shall receive one glossy print of each photo as well as all prints in digital form on compact disc. The **Design Professional** shall receive one glossy print.

5.17.3. Failure to Comply. Should the **Contractor** fail to adhere to any requirement set forth in the previous two paragraphs, the **City** may have the photographs taken at the **Contractor's** expense or receive a set-off against the **Contractor's** next application for payment.

5.18. Record Documents and Samples at the Site.

5.18.1 The **Contractor** shall maintain in a safe place at the site one record copy of all Plans, Specifications, Modifications, Change Orders, **Construction Change** Directives, Field Orders and written interpretations and clarifications in good order and annotated to show all changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to the **Design Professional** for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered by the **Contractor** to the **Design Professional** for the **City**.

5.19. Submittals.

5.19.1. Purpose. The purpose of Submittals is to demonstrate for those portions of the Work for which Submittals are required the way the **Contractor** proposes to conform to the information given and the design concept expressed in the Contract Documents.

5.19.2. Submittal Procedure. Within ten (10) days from the Notice to Proceed, the **Contractor** shall submit to the **Design Professional** a completed Submittals schedule. The **Contractor** shall review, approve, and submit to the **Design Professional** Submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the **City** or of separate contractors. Submittals made by the **Contractor** that are not required by the Contract Documents may be returned without action. The schedules shall be updated and resubmitted each month. All Submittals will be identified as the **Design Professional** may require and in the number specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions,

specified performance and design criteria, materials, and similar data to show the **Design Professional** the materials and equipment that the **Contractor** proposes to provide and to enable the **Design Professional** to review the information for the limited purposes stated below.

5.19.3. Samples. The **Contractor** shall also submit Samples to the **Design Professional** for review and approval in accordance with said accepted schedule of Submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which it is intended and otherwise as the **Design Professional** may require to enable the **Design Professional** to review the Submittal for the limited purposes stated below. The numbers of each Sample to be submitted will be as specified in the Specifications. Unless otherwise specified in the Specifications, three (3) specimens of each Sample shall be submitted.

5.19.3.1. The Samples shall be of sufficient size to permit proper evaluation of material. Where variations in color or other characteristics are to be expected, samples showing the minimum range of variation shall be submitted. Materials exceeding the range of variation of the approved Samples will not be approved on the Work.

5.19.3.2. All costs associated with delivery of Samples will be paid by the **Contractor**.

5.19.4. Contractor's Verifications. Before submitting each Submittal, the **Contractor** shall have determined and verified:

5.19.4.1. all field measurements, quantities, dimensions specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

5.19.4.2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

5.19.4.3. all information relative to the **Contractor's** sole responsibilities in respect of means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto.

5.19.5. Contractor's Representations. By approving and providing Submittals, the **Contractor** thereby represents that the **Contractor** has determined and verified all dimensions, quantities, field dimensions, relations to existing Work, coordination with Work to be installed later, coordination with information on previously accepted Submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the **Contractor**. In reviewing Submittals, the **Design Professional** shall be entitled to rely upon the **Contractor's** representation that such information is correct and accurate.

5.19.6. Coordination. The **Contractor** shall also have reviewed and coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.

5.19.7. Stamp or Specific Written Indication. Each Submittal will bear a stamp or specific written indication that the **Contractor** has satisfied the **Contractor's** obligations under the Contract Documents with respect to the **Contractor's** review and approval of that Submittal.

5.19.8. Written Notice of Variations. At the time of each Submittal, the **Contractor** shall give the **Design Professional** specific written notice of such variations, if any, that the Submittal may have from the requirements of the Contract Documents. Such notice is to be in a written communication separate from the Submittal. Moreover, the **Contractor** shall make a specific notation on each Submittal to the **Design Professional** for review and approval of each such variation.

5.19.9. Review and Approval by the Design Professional. The **Contractor** shall perform no portion of the Work requiring a Submittal until the respective Submittal has been approved by the **Design Professional**. Such Work shall be in accordance with approved Submittals.

5.19.9.1. The **Design Professional** will review and approve Submittals in accordance with the schedule of Submittals accepted by the **Design Professional** as required above. The **Design Professional's** review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. The **Design Professional's** review and approval will not extend to means, method, technique, sequences, or procedures of construction (except where a particular means, method, technique, sequences or procedures of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

5.19.10. Deviations. The **Contractor** shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the **Design Professional's** approval of Submittals unless the **Contractor** has specifically informed the **Design Professional** in writing of such deviation at the time of Submittal and the **Design Professional** has given written approval to the specific deviation. The **Contractor** shall not be relieved of responsibility for errors or omissions in Submittals by the **Design Professional's** approval thereof.

5.19.11. Revisions. The **Contractor** shall make corrections required by the **Design Professional** and shall return the required number of corrected copies of Submittals and submit as required new Submittals for review and approval. The **Contractor** shall direct

specific attention, in writing or on resubmitted Submittals, to revisions other than those requested by the **Design Professional** on previous Submittals. Unless such written notice has been given, the **Design Professional's** approval of a resubmitted Submittal shall not constitute approval of any changes not requested on the prior Submittal.

5.19.12. Related Work. Where a Submittal is required by the Contract Documents or the schedule of Submittals accepted by the **Design Professional**, any related Work performed prior to the **Design Professional's** review and approval of the pertinent Submittal will be at the sole expense and responsibility of the **Contractor**.

5.19.13. Informational Submittals. Informational Submittals upon which the **Design Professional** is not expected to take responsive action may be so identified in the Contract Documents.

5.19.14. Certification. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the **City** shall be entitled to rely upon such certifications, and neither the **City** nor the **Design Professional** shall be expected to make any independent examination with respect thereto.

5.20. Continuing the Work.

5.20.1. The **Contractor** shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the **City**. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as otherwise provided herein or as the **City** and the **Contractor** may agree in writing.

5.21. Use of Site; Access to Work.

5.21.1. The right of possession of the premises and the improvements made thereon by the **Contractor** shall remain at all times in the **City**. The **Contractor's** right to entry and use thereof arises solely from the permission granted by the **City** under the Contract Documents. The **Contractor** shall confine the **Contractor's** apparatus, the storage of materials, and the operations of the **Contractor's** workers to limits indicated by law, ordinance, the Contract Documents and permits and/or directions of the **Design Professional** and shall not unreasonably encumber the premises with the **Contractor's** materials. The **City** shall not be liable to the **Contractor**, the Subcontractors, Suppliers, or anyone else with respect to the conditions of the premises, except for a condition caused directly and solely by the negligence of the **City**.

5.21.2. At all times, the **City** and the **Design Professional** shall have access to the Work.

5.22. Protection of Persons and Property.

5.22.1. In General. The **Contractor** shall be responsible for initiating, maintaining, and supervising all health and safety precautions and programs in connection with the performance

of the Contract. The **Contractor** is responsible for the implementation of all Federal, State, and local health and safety requirements.

5.22.2. The **Contractor** shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

5.22.2.1. employees on the site and other persons who may be affected thereby;

5.22.2.2. the Work, materials, and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the **Contractor**, Subcontractors, or Sub-subcontractors;

5.22.2.3. other property at the site or adjacent or in close proximity thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and

5.22.2.4. any other property of the **City**, whether or not forming part of the Work, located at the site or adjacent thereto in areas to which the **Contractor** has access.

5.22.3. Notices and Compliance. The **Contractor** shall give notices and comply in all other respects with applicable laws, ordinances, rules, regulations, codes, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury, or loss. The **Contractor** shall notify owners of adjacent and nearby properties of underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

5.22.4. Erection and Maintenance of Safeguards. The **Contractor** shall erect and maintain, as required by existing conditions and the terms of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent and nearby sites and utilities.

5.22.5. Hazardous Materials and Equipment. When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the **Contractor** shall exercise utmost care and carry on such activities under the supervision of properly qualified personnel.

5.22.6. Damage to Property. The **Contractor** shall promptly remedy damage and loss to property referred to above. If the damage or loss is due in whole or in part to the **Contractor's** failure to take the precautions required herein, the **Contractor** shall bear the cost, subject to any reimbursement to which the **Contractor** is entitled under property insurance

required by the Contract Documents. The **Contractor** shall be fully and solely responsible for all Work and other operations carried out on adjacent properties. The insurance required under Article 8 shall cover such Work or operations, and the **Contractor** shall indemnify and defend the **City**, the **Design Professional**, and the owners of such adjacent or nearby properties from and against all claims, suits, losses, or costs arising out of such Work or operations.

5.22.7. Fire Protection Equipment and Services. The **Contractor** shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean and all combustible rubbish shall be promptly removed from the site.

5.22.8. Protection of Excavations, Trenches, etc. The **Contractor** shall at all times protect excavations, trenches, buildings and materials from rain water, ground water, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The **Contractor** shall provide and operate all pumps, piping, and other equipment necessary to this end.

5.22.9. Snow and Ice Removal. The **Contractor** shall remove snow and ice that might result in damage or delay.

5.22.10. Safety Representative. The **Contractor** shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

5.22.11. Weather Protection. (*Reference: M.G.L. c. 149, §44F(1).*) The **Contractor** shall install weather protection and furnish adequate heat in the protected area from November 1 through March 31.

5.22.12. Security. The **Contractor** shall provide, within the Contract Sum, a sufficient number of security personnel at the Site at all times when the **Contractor's** personnel are not present, from commencement of the Work until Substantial Completion to assure that the Site, the facility, and the Work, and all materials and equipment stored at the Site are fully and completely protected against loss or damage due to vandalism, theft, or malicious mischief. If the **Contractor** elects, in addition, to use guard dogs for this purpose, each dog shall at all times be accompanied by an adult handler. If the **Contractor** fails to comply with the requirements of this paragraph, then the **City** may provide appropriate security and charge the cost thereof to the **Contractor**. The **City's** provision of such security, or failure to do so, shall not relieve the **Contractor** of its responsibility to pay for loss or damage due to vandalism, theft, or malicious mischief at the Site.

5.22.13. Hazard Communication Programs. The **Contractor** shall be

responsible for coordinating any exchange of material safety data sheets or other hazard communications information required to be made available to or exchanged between or among employers at the site in accordance with laws, codes and regulations.

5.22.14. Noise Pollution Control. The **Contractor** shall comply with all applicable provisions of Somerville Municipal Code §9-109.

5.23. Cutting and Patching.

5.23.1. In General. Unless otherwise provided in the Contract Documents, the **Contractor** shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly, including the work of the City or of separate contractors.

5.23.2. Damage to Work of City or of Separate Contractor. The **Contractor** shall not damage or endanger a portion of the Work or fully or partially completed construction of the **City** or separate contractors by cutting, patching, or otherwise altering such construction, or by excavation. The **Contractor** shall not cut or otherwise alter such construction by the **City** or a separate contractor except with prior written consent of the **City** and of such separate contractor; such consent shall not be unreasonably withheld. The **Contractor** shall not unreasonably withhold from the **City** or a separate contractor the **Contractor's** consent to cutting or otherwise altering the Work.

5.23.3. Damage Caused by Contractor. Should the **Contractor** cause damage to the work or property of any separate contractor at the Site, or should any claim arising out of the **Contractor's** performance of Work at the Site be made by any separate contractor against the **Contractor**, the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, the **Contractor** shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. The **Contractor** shall, to the fullest extent permitted by laws and regulations, indemnify and hold harmless the **City**, the **Design Professional**, and the **Design Professional's** consultants from and against all claims, damages, losses and expenses (including, but not limited to, fees of the Design Professional, the Design Professional's consultants, attorneys, and other professionals, and court and arbitration or mediation costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, to the extent based on a claim arising out of the **Contractor's** performance of the Work. Should a separate contractor cause damage to the Work or property of the **Contractor** or should the performance of work by any separate contractor at the site give rise to any other claim, the **Contractor** shall not institute any action, legal or equitable, against the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from the **City**, the **Design Professional**, or any of the **Design Professional's** consultants, on account of any such damage or claim. If the **Contractor** delays at any time in performing or furnishing Work by any act or neglect of a separate contractor and the City and the

Contractor are unable to agree as to the extent of any adjustment in the Contract Time attributable thereto, the **Contractor** may make a claim for an extension of time in accordance with Article 16. An extension of the Contract Time shall be the **Contractor's** exclusive remedy with respect to the **City**, the **Design Professional**, and the **Design Professional's** consultants, for any delay, disruption, interference, or hindrance caused by any separate contractor.

5.24. Cleaning Up.

5.24.1. During the progress of the Work, the **Contractor** shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract or other debris. At the completion of the Work, the **Contractor** shall remove from and about the Project all waste materials, rubbish, and debris, and the **Contractor's** tools, construction equipment, machinery, and surplus materials. Surplus materials to be provided to the **City** by specifications shall be stored in a clean, safe and secure area as directed by the **City**. The **Contractor** shall leave the site clean and ready for occupancy by the **City** at Substantial Completion of the Work. Immediately prior to the **Design Professional's** inspection for Substantial Completion, the **Contractor** shall completely clean the premises. Concrete and ceramic surfaces shall be cleaned and washed. Resilient coverings shall be cleaned, waxed and buffed. Woodwork shall be dusted and cleaned. Sash, fixtures and equipment shall be thoroughly cleaned. Stains, spots, dust, marks and smears shall be removed from all surfaces. Hardware and all metal surfaces shall be cleaned and polished. Glass and plastic surfaces shall be thoroughly cleaned by professional window cleaners. All damaged, broken or scratched glass or plastic shall be replaced by the **Contractor** at the **Contractor's** expense. The **Contractor** shall restore to original condition all property not designated for alteration by the Contract Documents.

5.24.2. If the **Contractor** fails to clean up as provided herein, the **City** may do so and charge the cost thereof to the **Contractor**.

5.25. Royalties and Patents.

5.25.1 The **Contractor** shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. To the fullest extent permitted by law, the **Contractor** shall indemnify and hold harmless the **City** and the **Design Professional** from and against all claims, costs, losses, and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the work or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Contract Documents.

5.26. Contractor's Obligation to Perform.

5.26.1. The **Contractor's** obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of the **Contractor's**

obligation to perform the Work in accordance with the Contract Documents:

- 5.26.1.1. observations by the **Design Professional**;
- 5.26.1.2. recommendation of any progress or final payment by the **Design Professional**;
- 5.26.1.3. the issuance of a certificate of Substantial Completion or any payment by the **City** to the **Contractor** under the Contract Documents;
- 5.26.1.4. use or occupancy of the Work, Project, or Site, or any part thereof, by the **City**;
- 5.26.1.5. any acceptance by the **City** or any failure to do so;
- 5.26.1.6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptance by the **Design Professional**;
- 5.26.1.7. any inspection, test, or approval by others; or
- 5.26.1.8. any correction of defective Work by the **City**.

5.27. Indemnification; and Covenant Not To Sue.

5.27.1. To the fullest extent permitted by law, the **Contractor** shall assume the defense of, indemnify and hold harmless the **City**, the **Design Professional**, the **Design Professional's** consultants, and agents and employees of any of them, from and against claims, damages, losses, and expenses, including, but not limited, to attorneys' fee, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting there from, caused in whole or in part by alleged negligent acts or omissions of the **Contractor**, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this paragraph.

5.27.2. In claims against any person or entity indemnified under the foregoing paragraph by an employee of the **Contractor**, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under the foregoing paragraph shall not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for the **Contractor** or a Subcontractor under Workers' Compensation laws, disability benefit acts or other employee benefit acts.

5.27.3. The obligations of the **Contractor** in this Article shall not extend to the liability of the **Design Professional**, the **Design Professional's** consultants, and agents or employees of any of them arising out of (1) the preparation of maps, Plans, opinions, reports, surveys, Change Orders, designs, or Specifications, or (2) directions or instructions given by the **Design Professional**, the **Design Professional's** consultants and agents or employees of any of them, provided such instructions or directions are the primary cause of the injury or damage.

5.27.4. The **Contractor**, or any successor, assign, or subrogee of the **Contractor** agrees not to bring any civil suit, action, or other proceeding in law, equity or arbitration against the **Design Professional**, or the officers, employees, agents, or consultants of the **Design Professional**, for the enforcement of any action which the **Contractor** may have arising out of or in any manner connected with the Work. The **Contractor** shall assure that this covenant not to sue is contained in all subcontracts and sub-subcontracts of every tier and shall assure its enforcement. The **Design Professional**, its officers, employees, agents, and consultants are intended third-party beneficiaries of this covenant not to sue, and are entitled to enforce this covenant in law or equity.

5.28. Survival of Obligations.

5.28.1 All representations, indemnifications, warranties, and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Contract.

ARTICLE 6: SUBCONTRACTORS

6.1 Use of Subcontractors.

6.1.1 The **Contractor** shall use the Subcontractors named in the **Contractor's** Bid.

6.2 Substitution of Subcontractors.

6.2.1 The **Contractor** shall not substitute another Subcontractor therefore without notice to the **City** and the **City's** prior written consent of such substitution.

6.3 Names of Subcontractors.

6.3.1 Upon execution of the Contract with the **City**, the **Contractor** shall provide in writing to the **City**, through the **Design Professional**, the names, addresses, telephone numbers, and fax numbers of all persons proposed for each principal portion of the Work.

6.4. Objections to Subcontractors.

6.4.1 The **Contractor** shall not use any Subcontractor against whom the **City** has a reasonable objection. The **Contractor** shall not be required to contract with any person or entity against whom it has a reasonable objection.

6.5. Form of the Subcontract.

6.5.1 All Work performed by a Subcontractor shall be through an appropriate

subcontract. The form of subcontract shall be submitted to the **City's Law Department** for its approval, which shall not be unreasonably withheld or delayed.

6.6. Content of the Subcontract.

6.6.1. In addition to all statutorily mandated provisions and provisions required elsewhere in the Contract Documents, each subcontract shall expressly provide that:

6.6.1.1. Each subcontract agreement for a portion of the Work is assigned by the **Contractor** to the **City** provided that:

6.6.1.1.1. the assignment is effective only after termination of the Contract by the **City** or the **Contractor** and only for those subcontract agreements which the **City** accepts by notifying the Subcontractor in writing; and

6.6.1.1.2. the assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

6.6.1.2. Each Subcontractor is bound by the requirements of the Contract Documents for the express benefit of the **City**.

6.6.1.3. Each Subcontractor shall assume toward the **Contractor** all the obligations that the **Contractor** assumes toward the **City** and the **Design Professional**, unless otherwise provided by law.

ARTICLE 7: PERFORMANCE AND PAYMENT BONDS

7.1. Form of Bonds.

7.1.1 The performance and labor and material or payment bonds shall be in the form required by the **City**, copies of which are included in the Project Manual. The **City** reserves the right to reject any bond that does not conform to the **City's** requirements.

7.2. Furnished by the Contractor. (*Reference: M.G.L. c. 30, §39M(c);, M.G.L. c. 149, §29).*

7.2.1 The **Contractor** shall furnish a performance bond and a labor and materials or payment bond, each with a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the **City** and each in the sum of the Contract Sum, the premiums for which are to be paid by the **Contractor** and are included in the Contract Sum. The bonds shall remain in effect until final payment is made. The sum of the performance bond shall increase each time the Contract Sum is increased as a result of a Change Order.

7.3. Submission to the City.

7.3.1 The **Contractor** must submit the performance and a labor and materials or payment bonds to the **City** upon the **Contractor's** execution of the Agreement.

ARTICLE 8: INSURANCE REQUIREMENTS

8.1 Insurance Certificates.

8.1.1 Prior to starting work on this project, the contractor shall deposit with the **City**, certificates from insurers clearly stating that the required insurance policies have been issued to the **Contractor** and will remain in effect during the time period required to complete this contract. ACCORD forms will not be accepted. The certificates must be in a form satisfactory to the **City**. The insurance shall include all major divisions of coverage, and shall be on a comprehensive general basis including: Premises and Operations (including X-C-U), Owners and Contractors Protective, Products and Completed Operations, Owned, Non-owned or Hired and/or Leased Motor Vehicles. Such insurance shall be written for not less than any limits of liability, required by law or the following limits, whichever are greater.

8.2 Minimum Coverages. The **Contractor** shall possess and maintain throughout the contract period/project, insurance in the kinds and amounts as provided in Appendix D. The **Contractor** may purchase and maintain excess liability insurance in the in the umbrella form in order to satisfy the limits of liability required for the insurance to be purchased and maintained in accordance with the required requirements set forth above (in addition to the umbrella limits required). Evidence of such excess liability shall be delivered to the **City** in the form of a certificate and the certificate indicating the policy numbers and limits of liability of all underlying insurance.

8.3 Additional Insured. The **City** shall be named as an additional insured on each certificate, and the certificate must have the endorsement of the insurance agency.

8.4 Notice. Each certificate shall contain a notation that the insurer will give 30 days notice to the **City** prior to cancellation, change or non-renewal of policy.

8.5 Carrier Rating. Insurance carriers MUST have an A.M. Best rating of "A" or better.

8.6 Material Breach. Failure of the contractor to provide and continue in force such insurance shall be deemed a material breach of contract and shall operate as immediate termination thereof.

ARTICLE 9: TESTS AND INSPECTIONS

9.1 Access.

9.1.1 The **City**, the **Design Professional**, and all other persons designated by the **City** shall have access to the Work at reasonable times for observing, inspecting, and testing. The **Contractor** shall provide them with proper and safe conditions for such access and advise them of the **Contractor's** site safety procedures and programs so that they may comply therewith as applicable.

9.2 Tests and Inspections.

9.2.1. The **Contractor** shall give the **Design Professional** timely notice of readiness of

the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

9.2.2. Unless otherwise provided, the **Contractor** shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the **City**, or with the appropriate public authority and shall bear all related costs of tests, inspections, and approvals. If the laws or regulations of any public body having jurisdiction require any Work or part thereof specifically to be inspected, tested, or approved by an employee or other representative of such public body, the **Contractor** shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith and furnish the **Design Professional** with the required certificates of inspection, testing, or approval.

9.2.3. The **Contractor** shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for the **Design Professional's** acceptance of materials or equipment to be incorporated into the Work, or of materials, mix designs, or equipment submitted for approval prior to the **Contractor's** purchase thereof for incorporation into the Work.

9.2.4. If any Work that is to be inspected, tested, or approved is covered by the **Contractor**, Subcontractor, or Sub-subcontractor without the prior written consent of the **Design Professional**, it must be uncovered for observation, inspection, testing, or approval, if requested by the **Design Professional**. The **Contractor** must recover the Work at its own expense.

9.2.5. The **Contractor** shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the **Design Professional** in the **Design Professional's** administration of the Contract or by tests, inspections, or approvals required or performed by persons other than the **Contractor**.

ARTICLE 10

UNCOVERING AND CORRECTING WORK

10.1. Uncovering Work.

10.1.1. If a portion of the Work is covered contrary to the **Design Professional's** request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the **Design Professional**, be uncovered for the **Design Professional's** observation and be replaced, both at the **Contractor's** expense and without change in the Contract Time.

10.1.2. If a portion of the Work has been covered which the **Design Professional** has not specifically requested to observe prior to its being covered, the **Design Professional** may request to see such Work, and it shall be uncovered by the **Contractor**. If it is found that such Work is in accordance with the Contract Documents, costs of uncovering and replacing shall, by

appropriate Change Order, be charged to the **City**. If it is found that such Work is defective or not in accordance with the Contract Documents, the **Contractor** shall pay all claims, costs, losses, and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection, and testing and of satisfactory replacement of reconstruction (including, but not limited to, all costs of repair or replacement of work of others); and the **City** shall be entitled to an appropriate decrease in the Contract Sum. The **City** may take such decrease by reducing the then current application for payment accordingly or subsequent applications, if necessary, until the decrease is paid in full.

10.2. Correcting Work.

10.2.1. The **Contractor** shall promptly correct Work rejected by the **Design Professional** or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. The **Contractor** shall bear all costs of correcting such rejected Work including additional testing and inspections and compensation for the **Design Professional's** services and expenses made necessary thereby and any cost, loss, or damages to the **City** resulting from such failure or defect.

10.2.2. If, within one (1) year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established in Article 15, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the **City** to do so, unless the **City** has previously given the **Contractor** a written acceptance of such condition. This period of one (1) year shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. This obligation to correct under this paragraph shall survive acceptance of the Work under the Contract and termination of the Contract. The **City** shall give such notice promptly after discovery of the condition.

10.2.3. The **Contractor** shall correct, remove, or replace portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the **Contractor** nor accepted by the **City**.

10.2.4. If the **Contractor** fails within a reasonable time to correct nonconforming Work, or to remove and replace rejected Work, or fails to perform the Work in accordance with the Contract Documents, the **City** may correct it in accordance with the provisions herein. If the **Contractor** does not proceed with correction, removal, or replacement of such nonconforming Work within seven (7) days from the date of written notice from the **Design Professional**, the **City** may correct it and store any salvageable materials or equipment at the **Contractor's** expense. If the **Contractor** does not pay costs of any such removal and storage within ten (10) days after written notice, the **City** may upon ten (10) additional days' written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof,

after deducting costs and damages that should have been borne by the **Contractor**, including compensation for the **Design Professional's** services and expenses made necessary thereby. If such proceeds of sale do not cover all the costs that the **Contractor** should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the **Contractor** are not sufficient to cover such amount, the **Contractor** shall pay the difference to the **City**.

10.2.5. The **Contractor** shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the **City** or separate contractors caused by the **Contractor's** correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

10.2.6. Nothing contained in this paragraph shall be construed to establish a period of limitation with respect to other obligations that the **Contractor** might have under the Contract Documents. Establishment of the time period of one (1) year as described in the above paragraph related only to the specific obligation of the **Contractor** to correct the Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced nor to the time within which proceedings may be commenced to establish the **Contractor's** liability with respect to the **Contractor's** obligations other than specifically to correct the Work.

10.3. Acceptance of Nonconforming Work.

10.3.1 If, instead of requiring correction or removal and replacement of defective or nonconforming Work, the **City** prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the **City** may do so instead of requiring its removal and correction, in which case the **Contractor** shall pay all claims, costs, losses, and damages attributable to the **City's** evaluation of and determination to accept such defective or nonconforming Work. The Contract Sum will be reduced as appropriate. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 11: CHANGES IN THE WORK

11.1. In General.

11.1.1. The Contract Sum constitutes the total compensation (subject to authorized adjustments) payable to the **Contractor** for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the **Contractor** shall be at the **Contractor's** expense without any change in the Contract Sum.

11.1.2. Without invalidating the Contract and without notice to any surety, the **City** may, at any time or from time to time, order additions to, deletions from, or revisions in the Work. Such additions, deletions, or revisions will be authorized by a Change Order, a Modification or a **Construction Change Directive**. Upon receipt of any such document, the **Contractor** shall promptly proceed with the Work involved that will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

11.1.3. The **Contractor** shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified, or supplemented, except as otherwise provided herein.

11.2. Change Orders.

11.2.1. (*Reference: M.G.L. c. 30, §39I;*). The **Contractor** shall perform all the Work required by this Contract in conformity with the Plans and Specifications contained herein. No willful and substantial deviation from said Plans and Specifications shall be made unless authorized in writing by the **City** and the **Design Professional** in charge of the Work who is duly authorized by the **City** to approve such deviations. In order to avoid delays in the prosecution of the Work required by such Contract, such deviation from the Plans or Specifications may be authorized by a written order of the **City** or the **Design Professional** so authorized to approve such deviation. Within thirty (30) days thereafter, such written order shall be confirmed by a certificate of the **City** stating: (1) If such deviation involves any substitution or elimination of materials, fixtures or equipment, the reasons why such materials, fixtures, or equipment were included in the first instance and the reasons for substitution or elimination, and, if the deviation is of any other nature, the reasons for such deviation, giving justification therefore; (2) that the specified deviation does not materially injure the Project as a whole; (3) that either the work substituted for the Work specified is of the same cost and quality, or that an equitable adjustment has been agreed upon between the **City** and the **Contractor** and the amount in dollars of said adjustment; and (4) that the deviation is in the best interest of the **City**.

11.3. Construction Change Directive.

11.3.1. A **Construction Change Directive** shall be used in the absence of total agreement on the terms of a Change Order.

11.3.2. Upon request of the **City** or the **Design Professional**, the **Contractor** shall without cost to the **City** submit to the **Design Professional** in such form as the **Design Professional** may require, an accurate written estimate of the cost of any proposed extra work or change. The estimate shall indicate the quantity and unit cost of each item of materials, and the number of hours of work and hourly rate for each class of labor, as well as the description and amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of materials shall be shown if required by the **Design Professional**. If required by the **Design Professional**, in order to establish the exact cost of new Work added or of previously required Work omitted, the **Contractor** shall obtain and furnish to the **Design Professional** bona fide proposals from recognized Suppliers for furnishing any material included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work, and shall be furnished at the **Contractor's** expense.

11.3.3. The **Contractor** shall state in the estimate any extension of time required for the completion of the Work if the change or extra Work is ordered. The **Contractor** shall document,

through a critical path analysis, or some other clearly delineated explanation, how the proposed change affects other aspects of the Work, and why it would require an extension of time. The **Contractor** shall promptly revise and resubmit such estimate if the **Design Professional** determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors.

11.3.4. If the **Construction Change** Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods, as selected by the **City**, selection of which does not require the consent of the **Contractor**:

11.3.4.1. by unit prices stated in the Contract Documents or otherwise mutually agreed upon; or

11.3.4.2. by Cost and Percentages estimated by the **Contractor** as provided herein and accepted by the **City**, whereupon the **Contractor's** estimate shall become a fixed price which shall not be changed by any variation in the actual cost of executing the Work covered by the change; or

11.3.4.3. by actual Cost determined after the Work covered by the change is completed, plus Percentage; or

11.3.4.4. by submission to arbitration or a court, which shall determine the fair value of the Work covered by the change.

11.3.5. “Cost” shall mean the estimated or actual net increase or decrease in cost to the **Contractor**, Subcontractor, or Sub-subcontractor for performing the Work covered by the change, including actual payments for materials, equipment rentals, expendable items, wages, and associated benefits to the workers and to supervisors employed full time at the Site, insurance, bonds, and other provable direct costs, but not including any administrative, accounting or expediting costs, or other indirect or overhead costs, or any wages or benefits of supervisory personnel not assigned full time to the Site, or any amount for profit or fee to the **Contractor**, Subcontractor, or Sub-subcontractor.

11.3.6. “Percentage” shall mean an allowance to be added to or subtracted from the Cost in lieu of overhead and profit and of any other expense that is not included in the Cost of the Work covered by the change, as defined above. Percentage for a Sub-subcontractor shall be 8% of any net increase or decrease of Cost of any Work performed by the Sub-subcontractor’s own forces plus 4% of any net increase or decrease in Cost of any Work performed for the Sub-subcontractor by lower tier Sub-subcontractors. Percentage for a Subcontractor shall be 12% of any net increase or decrease of Cost of any Work performed by the Subcontractor’s own forces plus 4% of the Cost of Work performed by Sub-subcontractors. Percentage for the **Contractor** shall be 15% of any net increase or decrease of Cost of any Work performed by the **Contractor's** own forces plus 5% of any net increase or decrease in the Cost for all other Work

covered by the change. When the **Contractor** is also performing Work as a Subcontractor or Sub-subcontractor, the **Contractor** shall only be entitled to a total of no more than 15% of any net increase or decrease of Cost of any Work.

11.3.7. When in the reasonable judgment of the **Design Professional** a series of **Construction Change** Directives or Change Orders effect a single change, Percentage shall be calculated on the cumulative net increase or decrease in Cost, if any.

11.3.8. If unit prices are stated in the Contract Documents or are subsequently agreed upon, and if quantities originally contemplated are so changed in a Proposed Change Order or **Construction Change** Directive that the application of such unit prices to quantities of Work proposed will cause substantial inequity to the **City** or the **Contractor**, the applicable unit prices shall be equitably adjusted.

11.3.9. If the **City** elects to determine the Cost of the Work as provided in method (11.3.4.1) using unit prices stated in the Contract Documents or subsequently agreed upon, the unit prices shall be subject to the prior paragraph. Notwithstanding the inclusion of unit prices in the Contract Documents, it shall be the **City's** option to require the Cost of any given change to be determined by one of the other methods stated in 11.3.4. If the **City** elected to determine the Cost of the change by unit prices and the nature of the work is such that its extent cannot readily be measured after the completion of such work or any subsequent Work, the **Contractor** shall keep daily records, available at all times to the **Design Professional** for inspection, of the actual quantities of such Work put in place, and delivery receipts or other adequate evidence, acceptable to the **Design Professional**, indicating the quantities of materials delivered to the Site for use in such unit price Work, and distinguishing such from other similar material delivered for use in Work include in the base Contract Sum. If so required by the **Design Professional**, materials for use in unit price Work shall be stored apart from all other materials on the Project.

11.3.10. If the **City** elects to determine the Cost of the Work as provided in methods 11.3.4.3. or 11.3.4.4. or if the method of determining the Cost has not been established before the Work is begun, the **Contractor** shall keep detailed daily records of labor and material costs applicable to the Work.

11.3.11. Upon receipt of a **Construction Change** Directive, the **Contractor** shall promptly proceed with the change in the Work involved and advise the **Design Professional** in writing of the **Contractor's** agreement or disagreement with the method, if any, provided in the **Construction Change** Directive for determining the proposed adjustment in the Contract Time.

11.3.12. A **Construction Change** Directive signed by the **Contractor** indicates the agreement of the **Contractor** therewith, including adjustment in the Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

11.3.13. If the **Design Professional** and the **Contractor** do not agree with the adjustment in the Contract Time or the method for determining it, the adjustment or the method shall be referred to the **Design Professional** for determination.

11.4. Minor Changes in the Work.

11.4.1. The **Design Professional** has the authority to order minor changes in the Work. “Minor changes” as used in this paragraph mean changes which are so insignificant as to not affect the Contract Sum or the Contract Time and which are not inconsistent with the intent of the Contract Documents. Any minor change shall be committed to a written order which shall be binding on both the **City** and the **Contractor** and which shall be promptly carried out by the **Contractor**.

11.5. Certificate of Appropriations. (*Reference: M.G.L. c. 44, §31C;*). This Contract shall not be deemed to have been made until the **City's** auditor has certified thereon that an appropriation in the amount of this Contract is available therefor and that an officer or agent of the **City** has been authorized to execute said Contract and approve all requisitions and change orders. No order to the **Contractor** for a change in or addition to the Work, whether in the form of a drawing, plan, detail or any other written instruction, unless it is an order which the **Contractor** is willing to perform without any increase to the Contract price, shall be deemed to be given until the auditor has certified thereon that an appropriation in the amount of such order is available therefore; but such certificate shall not be construed as an admission by the **City** of its liability to pay for such work. The certificate of the auditor that an appropriation in the amount of this Contract or in the amount of such order is available shall bar any defense by the **City** on the grounds of insufficient appropriation.

ARTICLE 12: CHANGE IN THE CONTRACT TIME

12.1. Date of Commencement.

12.1.1 The date of commencement of the Work is the date established in the Notice to Proceed. The date shall not be postponed by the failure to act of the **Contractor** or persons or entities for whom the **Contractor** is responsible.

12.2. Progress and Completion.

12.2.1. Time is of the essence; all time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the **Contractor** confirms that the Contract Time is a reasonable period for performing the Work.

12.2.2. The **Contractor** shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

12.2.3. Within five (5) working days of award of contract, the **Contractor** shall submit to the **Design Professional** a progress schedule showing for each class of Work included in the schedule of values, the percentage of completion to be obtained and the total dollar value of

Work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of Work in place, but may include, at the **Design Professional's** discretion, the value of materials delivered but not in place.

12.2.4. The progress schedule shall be based on an orderly progression of the Work, allowing adequate time for each operation (including adequate time for submission and review of submittals), and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The progress schedule will be reviewed by the **Design Professional** for compliance with the requirements of this Article and will be accepted by the **Design Professional** or returned to the **Contractor** for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the progress schedule has been approved by the **Design Professional**. The **Design Professional's** review of the progress schedule shall not impose any duty on the **Design Professional** or the **City** with respect to the timing, planning, scheduling, or execution of the Work. In particular, if the **Contractor** proposes a progress schedule indicating a date of Substantial Completion which is earlier than the Contract Time, the **Contractor** shall not be entitled to additional payment or compensation of any kind if, for any reason, the full Contract Time is required to achieve Substantial Completion of the Work.

12.2.5. If in any Application for Payment, the total value of the completed Work in place, as certified by the **Design Professional**, is less than 90% of the total value of the Work in place estimated in the progress schedule, the **City** may, at the **City's** option, require the **Contractor** to accelerate the progress of the Work without cost to the **City** by increasing the workforce or hours or Work or by other reasonable means approved by the **Design Professional**.

12.2.6. If each of three successive applications, as certified by the **Design Professional**, indicate that the actual Work completed is less than 90% of the values estimated in the progress schedule to be completed by the respective dates, the **City** may at the **City's** option, treat the **Contractor's** delinquency as a default justifying the action permitted under Article 18.

12.2.7. If the **Design Professional** has determined that the **Contractor** should be permitted to extend the time for completion as provided below, the calendar dates in the progress schedule shall be adjusted accordingly to retain their same relationship to the adjusted date of Substantial Completion, and the dollar value of the Work to be completed as of the first of each month shall be adjusted pro rata.

12.2.8. If the **Contractor** fails to submit any application for payment in any month, the **Design Professional** shall, for the purpose of this evaluation of progress, certify separately to the actual value of the Work in place completed as of the first of the month to the best of the **Design Professional's** knowledge.

12.2.9. Nothing herein shall limit the **City's** right to liquidated or other damages for delays by the **Contractor** or to any other remedy which the **City** may be entitled or may possess

under other provisions of the Contract Documents or by law.

12.3. Delays and Extensions of Time.

12.3.1. If the **Contractor** is delayed at any time in the progress of the Work by an act or neglect of the **City** or the **Design Professional**, or of an employee of either, or of a separate contractor employed by the **City**, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes (except weather) beyond the **Contractor's** control, or by delay authorized by the **City**, or by other causes which the **Design Professional** determines may justify delay, then the Contract Time shall be extended by Change Order or **Construction Change Directive** for such reasonable time as the **Design Professional** may determine.

12.3.2. Claims relating to time shall be made in accordance with applicable provisions of Article 16.

12.3.3. No claim for extension of time shall be allowed on account of failure of the **Design Professional** to furnish Plans, Specifications or instructions or to return Shop Drawings or Samples until fifteen (15) days after receipt by the **Design Professional** by registered or certified mail of written demand for such instructions, Plans, Specifications, or Samples, and then not unless such claim is reasonable.

12.3.4. No extensions of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the **Contractor**, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

12.3.5. The **Contractor** hereby agrees that the **Contractor** shall have no claim for damages of any kind against the **City** or the **Design Professional** on account of any delay in the commencement of the Work and/or any hindrance, delay, or suspension of any portion of the Work, whether such delay is caused by the **City**, the **Design Professional**, or otherwise, except as and to the extent expressly provided under M.G.L. c. 30, §39O, in the case of written orders by the **City**. The **Contractor** acknowledges that the **Contractor's** sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

12.3.6. (*Reference: M.G.L. c. 30, §39O;*). (a) The **City** may order the **Contractor** in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine to be appropriate for the convenience of the **City**, provided however that if there is a suspension, delay, or interruption for fifteen (15) days or more due to a failure of the **City** to act within the time specified in this Contract, the **City** shall make an adjustment in the Contract prices for any increase in the cost of performance of this Contract under this provision for any suspension, delay, interruption, or failure to act to the extent that such is due to any cause for which this Contract provides for an equitable adjustment of the Contract price under any other

Contract provisions.

(b) The **Contractor** must submit the amount of a claim under provision (a) to the **City** in writing as soon as practicable after the end of the suspension, delay, interruption, or failure to act and, in any event, not later than the date of final payment under this Contract and, except for costs due to a suspension order, the **City** shall not approve any costs in the claim incurred more than twenty (20) days before the **Contractor** notified the **City** in writing of the act or a failure to act involved in the Claim.

In the event a suspension, delay, interruption, or failure to act of the **City** increases the cost of performance to any Subcontractor, that Subcontractor shall have the same rights against the **Contractor** for payment for an increase in the cost of its performance as provisions (a) and (b) give the **Contractor** against the **City**, but nothing in provisions (a) and (b) shall in any way change, modify, or alter any other rights which the **Contractor** or the Subcontractor may have against each other.

12.4. Liquidated Damages.

12.4.1. If the **Contractor** shall fail to achieve Substantial Completion within the Contract Time, it shall be liable to pay the **City** the daily amount specified in the Agreement, not as a penalty, but as a fixed and agreed upon damages for breach of contract. The said amount is fixed and agreed upon because of the difficulty of ascertaining the **City's** actual damages. It is mutually understood that the said amount is a reasonable approximation or estimate thereof as of the date of the Agreement. The **City** may elect to withhold said amount from periodic or final payments due to the **Contractor**, in addition to retainage and other back charges.

12.5. Changes in the Contract Time.

12.5.1. In Writing. The Contract Time may only be changed by a Change Order or a Modification. Any claim for an adjustment of the Contract Time shall be based on a written notice delivered to the party making the claim to the other party and to the **Design Professional** promptly (but in no event later than seven (7) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within thirty (30) days after such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the **Design Professional** in accordance with Article 16. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph.

12.5.2. Early Completion. The Contract Time shall not be changed due to a delay in the **Contractor's** early completion date.

ARTICLE 13: PAYMENTS

13.1. Schedule of Values.

13.1.1. The **Contractor** shall submit to the **Design Professional** a schedule of values which shall subdivide the Work into its component parts and shall include quantities, direct craft labor worker hours, labor cost and material/equipment cost. Labor cost shall include an appropriate amount of construction equipment costs, supplemental costs, administrative expenses, contingencies, and profit. The **Contractor** shall prepare the schedule of values in such form and supported by such data to substantiate its accuracy as the **Design Professional** may require and shall be revised if later found by the **Design Professional** to be inaccurate. This schedule, unless objected to by the **Design Professional**, shall be used as a basis for reviewing the **Contractor's** applications for payment.

13.2. Content and Submission of Applications for Payment.

13.2.1. At least ten (10) days before the date established for each progress payment, the **Contractor** shall submit to the **Design Professional** six (6) copies of an itemized application for payment for Work completed in accordance with the schedule of values. Such application shall be in a form or format established or approved by the **Design Professional** and shall be supported by documentation substantiating the **Contractor's** right to payment.

13.2.2. When **Construction Change** Directives have set forth an adjustment to the Contract Sum but have not yet been included in Change Orders, the value established by the **City** may be included in the application.

13.2.3. Applications covering Work of Subcontractors or Suppliers shall not include requests for payments of amounts the **Contractor** does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason. The **Contractor** shall not be paid for any Work performed by a Subcontractor unless and until the **City** receives for that Subcontractor a certificate of insurance that conforms to the requirements of the Contract Documents .

13.2.4. Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the Site for subsequent incorporation in the Work. If approved in advance by the **City**, payment may similarly be made for materials and equipment suitably stored off the Site at a location agreed upon in writing. Payment for materials and equipment stored on or off the Site shall be conditioned upon the application for payment being accompanied by a bill of sale, an invoice, or other documentation warranting that the **City** has received the materials and equipment free and clear of all liens, claims, security interests, or encumbrances, hereinafter collectively referred to as "liens," and evidence that the materials and equipment are covered by appropriate insurance and other arrangements to protect the **City's** interest therein.

13.2.5. Each application for payment or periodic estimate requesting payment shall be accompanied by, at the **City's** option, a certificate from each Subcontractor stating that the Subcontractor has been paid all amounts due the Subcontractor on the basis of the previous

periodic payment to the **Contractor**, or else stating the amount not so paid and the reason for the discrepancy. In the event of any such discrepancy, the **Contractor** shall furnish the **Contractor's** own written explanation to the **City** through the **Design Professional**. Such waiver or certificate shall be in a form acceptable to the **City**.

13.3. False Applications for Payment.

13.3.1. (*Reference: M.G.L. c. 266, §§67B*). Any person who makes or presents to any claim upon or against any employee or department of the **City**, knowing such claim to be false, fictitious, or fraudulent shall be punished by a fine or not ore than ten thousand dollars (\$10,000) or by imprisonment in the state prison for not more than five (5) years, or in the house of correction for not more than two and one-half years, or both.

13.4. Review of Applications for Payment.

13.4.1. The **Design Professional** shall review each application for payment and will reject any application that (1) is not accompanied by the required documentation or (2) contains errors, mathematical or otherwise.

13.4.2. Within five (5) business days after receipt of an application for payment, the **Design Professional** will either (1) return the application to the **Contractor** with a written explanation as to why it was rejected or (2) issue to the **City** a certificate for payment, with a copy to the **Contractor**, for such amount as the **Design Professional** determines is properly due. In the event an application is returned to the **Contractor**, the date of receipt of the application shall be the date of receipt of the corrected application.

13.4.3. The **Design Professional** or the **City** may make changes to any application submitted by the **Contractor**.

13.4.4. By recommending any payment, the **Design Professional** will not thereby be deemed to have represented that: (1) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to the **Design Professional** in the Contract Documents or (2) that there may not be other matters or issues between the parties that might entitle the **Contractor** to be paid additionally by the **City** or entitle the **City** to withhold payment to the **Contractor**. The **Design Professional's** approval of the application for payment and the accompanying documentation shall indicate that to the best of the **Design Professional's** knowledge, information, and belief, the Work has progressed to the point indicated by the **Contractor**, and that the quality of the Work is in accordance with the Contract Documents, subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests specified in the Contract Documents, final determination of quantities and classifications for unit price work and any other qualifications so stated.

13.4.5. The **Design Professional's** recommendation of any payment shall not mean that

the **Design Professional** is responsible for the **Contractor's** means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the **Contractor** to comply with laws and regulations applicable to the furnishing or performance of Work, or for any failure of the **Contractor** to perform or furnish Work in accordance with the Contract Documents.

13.4.6. No certificate given or payment made shall be evidence of the performance of this Contract, either wholly or in part and no payment, whether made upon the final certificate or otherwise, shall be construed as an acceptance of defective work or materials.

13.5. Decisions to Withhold Certification.

13.5.1. The **Design Professional** may refuse to recommend the whole or any part of any payment if, in the **Design Professional's** opinion, it would be incorrect to make the representations to the **City** referred to above.

13.5.2. If the **Contractor** and the **Design Professional** cannot agree on a revised amount, the **Design Professional** will promptly approve a certificate for payment for the amount for which the **Design Professional** is able to make such representations to the **City**. The **Design Professional** may also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a certificate for payment previously issued, to such extent as may be necessary in the **Design Professional's** opinion to protect the **City** from loss because of:

13.5.2.1. defective Work not remedied;

13.5.2.2. third party claims filed or reasonable evidence indicating probable filing of such claims;

13.5.2.3. failure of the **Contractor** to make payments properly to Subcontractors or for labor, materials or equipment;

13.5.2.4. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

13.5.2.5. damage to the **City** or another contractor;

13.5.2.6. reasonable evidence that the Work will not be completed within the Contract Time, and that retainage currently held by the **City** would not be adequate to cover actual or liquidated damage for the anticipated delay;

13.5.2.7. persistent failure to carry out the Work in accordance with the Contract Documents; or

13.5.2.8. failure of mechanical trade or electrical trade subcontractors to comply with mandatory requirements for maintaining record drawings. The **Contractor** shall check record drawings each month. Written confirmation that the record drawings are current will be required by the **Design Professional** before approval of the **Contractor's** monthly payment requisition.

13.5.3. When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

13.6. Progress Payments.

13.6.1. After the **Design Professional** has issued a certificate for payment, the **City** shall make payment in the manner and within the time provided in the Contract Documents.

13.6.2. (*Reference: M.G.L. c. 30, §39G;*). The **City** shall pay the amount due pursuant to any periodic, Substantial Completion or final estimate within thirty-five (35) days after receipt of written acceptance for such estimate from the **Contractor**. In the case of periodic payments, the **City** may deduct from its payment a retention based on its estimate of the fair value of its claims against the **Contractor**, a retention for direct payments to Subcontractors based on demands for same in accordance with M.G.L. c. 30, §39F; and a retention to secure satisfactory performance of the contractual work, not exceeding five percent (5%) of the approved amount of any periodic payment, and the same right to retention shall apply to bonded Subcontractors entitled to direct payment under M.G.L. c. 30, §39F; provided, that a five percent (5%) value of all items that are planted in the ground shall be deducted from the periodic payments until final acceptance.

13.6.3. No periodic, Substantial Completion or final estimate or acceptance or payment thereof shall bar the **Contractor** from reserving all rights to dispute the quantity and amount of, or the failure of the **City** to approve a quantity and amount of, all or part of any Work item or extra Work item.

13.7. Final Payment.

13.7.1. After final inspection and after the **Contractor** has completed all the required corrections to the satisfaction of the **Design Professional** and the **City** and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, bonds, certificates, or other evidence of insurance, certificates of inspection, marked-up record documents, and all other documents called for in the Contract Documents, as well as any surplus materials requested by the **City**, the **Contractor** may make an application for final payment as provided below.

13.7.2. (*Reference: M.G.L. c. 30, §39G;*). Within thirty (30) days after receipt by the **City** of a notice from the **Contractor** stating that all of the Work required by the Contract has

been completed, the **City** shall prepare and forthwith send to the **Contractor** for acceptance a final estimate for the quantity and price of the Work done and all retainage on the Work less all payments made to date, unless the **City's** inspection shows that Work required by the Contract remains incomplete or unsatisfactory, or that documentation required by the Contract has not been completed.

13.7.3. The making and acceptance of final payment will constitute a waiver of all claims by the **Contractor** against the **City** other than those previously made in writing and still unsettled.

13.8. Payments to Subcontractors.

13.8.1. Neither the **City** nor the **Design Professional** shall have an obligation to pay or see to the payment of money to a Subcontractor, Sub-subcontractor, or Supplier except as may otherwise be required by law.

13.8.2. (*Reference: M.G.L. c. 30, §39F;*) (1)(a) Forthwith after the **Contractor** receives payment on account of a periodic estimate, the **Contractor** shall pay to each Subcontractor the amount paid for the labor performed and the materials furnished by that Subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the **Contractor**.

(b) Not later than the sixty-fifth day after each Subcontractor substantially completes its Work in accordance with the Plans and Specifications, the entire balance due under the subcontract, less amounts retained by the **City** as the estimated cost of completing the incomplete and unsatisfactory items of Work, shall be due the Subcontractor; and the **City** shall pay that amount to the **Contractor**. The **Contractor** shall forthwith pay to the Subcontractor the full amount received from the **City** less any amount specified in any court proceeding barring such payment and also less any amount claimed due from the Subcontractor by the **Contractor**.

(c) Each payment made by the **City** to the **Contractor** pursuant to paragraphs (a) and (b) of M.G.L. c. 30, §39F(1);, for the labor performed and the materials furnished by a Subcontractor shall be made to the **Contractor** for the account of that Subcontractor; and the **City** shall take reasonable steps to compel the **Contractor** to make each such payment to each such Subcontractor. If the **City** has received a demand for direct payment from a Subcontractor for any amount which has already been included in a payment to the **Contractor** or which is to be include in a payment to the **Contractor** for payment to the Subcontractor as provided in paragraphs (a) and (b) of M.G.L. c. 30, §39F(1), the **City** shall act upon the demand as provided in M.G.L. c. 30, §39F.

(d) If, within seventy (70) days after the Subcontractor has substantially

completed the subcontract Work, the Subcontractor has not received from the **Contractor** the balance due under the subcontract including any amount due for extra labor and materials furnished to the **Contractor**, less any amount retained by the **City** as the estimated cost of completing the incomplete and unsatisfactory items of Work, the Subcontractor may demand direct payment of that balance from the **City**. The demand shall be by a sworn statement delivered to or sent by certified mail to the **City**, and a copy shall be delivered to or sent by certified mail to the **Contractor** at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of completion of the subcontract Work. [The demand letter shall indicate the certified mail number assigned by the postal service or the date of delivery to the **Contractor**.] Any demand made after substantial completion of the subcontract Work shall be valid even if delivered or mailed prior to the seventieth day after the Subcontractor has substantially completed the subcontract Work. Within ten (10) days after the Subcontractor has delivered or so mailed the demand to the **City** and delivered or so mailed a copy to the **Contractor**, the **Contractor** may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the **City**, and a copy shall be delivered to or sent by certified mail to the Subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract, including any amount due for extra labor and materials furnished to the **Contractor** and of the amount due for each claim made by the **Contractor** against the Subcontractor.

(e) Within fifteen (15) days after receipt of the demand by the **City**, but in no event prior to the seventieth day after substantial completion of the subcontract Work, the **City** shall make direct payment to the Subcontractor of the balance due under the subcontract, including any amount due for extra labor and materials furnished to the **Contractor**, less any amount (i) retained by the **City** as the estimated cost of completing the incomplete or unsatisfactory items of Work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the **Contractor** in the sworn reply; provided that the **City** shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to or for which the sworn reply does not contain the detailed breakdown required by the previous paragraph. The **City** shall make further direct payments to the Subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this paragraph.

(f) The **City** shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of the previous paragraph in an interest-bearing joint account in the names of the **Contractor** and the Subcontractor in a bank in Massachusetts selected by the **City** or agreed upon by the **Contractor** and the Subcontractor and shall notify the **Contractor** and the Subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the **Contractor** and the Subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to the previous paragraph shall be made out of amounts payable to the **Contractor** at the time of receipt of a demand for direct payment from a Subcontractor and out of amounts which later become payable to the **Contractor** and in the order of receipt of such demands from Subcontractors. All direct payments shall discharge the obligation of the **City** to the **Contractor** to the extent of such payment.

(h) The **City** shall deduct from payments to a **Contractor** amounts that, together with the deposits in interest-bearing accounts pursuant to paragraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from Subcontractors. All such amounts shall be earmarked for such direct payments, and the Subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the **Contractor**.

(i) If the Subcontractor does not receive payment as provided in paragraph (a) or if the **Contractor** does not submit a periodic estimate for the value of the labor or materials performed or furnished by the Subcontractor and the Subcontractor does not receive payment for same when due less the deductions provided for in paragraph (a), the Subcontractor may demand direct payment by following the procedure in paragraph (d) and the **Contractor** may file a sworn reply as provided in that same paragraph. A demand made after the first day of the month following that for which the Subcontractor performed or furnished the labor and materials for which the Subcontractor seeks payment shall be valid even if delivered or mailed prior to the time payment was due on a periodic estimate from the **Contractor**. Thereafter the **City** shall proceed as provided in paragraphs (e), (f), (g), and (h). "Subcontractor" as used in this paragraph (1)(i) shall mean a person approved by the **City** in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the **Contractor**.

(2) Any assignment by a Subcontractor of the rights under this section to a surety company furnishing a bond under the provisions of M.G.L. c. 149, §29; shall be invalid. The assignment and subrogation rights of the surety to amounts included in a demand for direct payment which are in the possession of the **City** or which are on deposit pursuant to paragraph (g) shall be subordinate to the rights of all Subcontractors who are entitled to be paid under this section and who have not been paid in full.

(3) A **Contractor** or a Subcontractor shall enforce a claim to any portion of the amount of a demand for direct payment deposited as provided in herein by a petition in equity in the superior court against the other and the bank shall not be a necessary party. A Subcontractor shall enforce a claim for direct payment or a right to require a deposit as provided in paragraph (f) by a petition in equity in the superior court against the **City** and the **Contractor** shall not be a necessary party. Upon motion of any party

the court shall advance for speedy trial any petition filed as provided in this paragraph. M.G.L. c. 231, §§59 and 59B shall apply to such petitions. The court shall enter an interlocutory decree upon which execution shall issue for any part of a claim found due pursuant to §§59 and 59B and, upon motion of any party, shall advance for speedy trial the petition to collect the remainder of the claim. Any party aggrieved by such interlocutory decree shall have the right to appeal therefrom as from a final decree. The court shall not consolidate for trial the petition of any Subcontractor with the petition of one or more Subcontractors or the same general contract unless the court finds that a substantial portion of the evidence of the same events during the course of construction (other than the fact that the claims sought to be consolidated arise under the same general contract) is applicable to the petitions sought to be consolidated and that such consolidation will present unnecessary duplication of evidence. A decree in any such proceeding shall not include interest on the disputed amount deposited in excess of the interest earned for the period of any such deposit. No person except a Subcontractor filing a demand for direct payment for which no funds due the **Contractor** are available for direct payment shall have a right to file a petition in court of equity against the **City** claiming a demand for direct payment is premature, and such Subcontractor must file the petition before the **City** has made a direct payment to the Subcontractor and has made a deposit of the disputed portion as provided in part (iii) of paragraph (e) and in paragraph (f).

(4) In any petition to collect any claim for which a Subcontractor has filed a demand for direct payment the court shall, upon motion of the **Contractor**, reduce by the amount of any deposit of a disputed amount by the **City** as provided in part (iii) of paragraph (e) and in paragraph (f) any amount held under a trustee writ or pursuant to a restraining order or injunction.

ARTICLE 14: SUBSTANTIAL COMPLETION

14.1. Substantial Completion.

14.1.1. Upon Substantial Completion of the Work, the **Contractor** shall present in writing to the **City** its certification that the Work has been substantially completed and include in its certification (1) a list of items to be completed or corrected, (2) all special warranties required by the Contract Documents, endorsed by the **Contractor** and in a form reasonably acceptable to the **Design Professional** and (3) the permits and certificates referred to in 13.7.1., or elsewhere. The failure to include any item on the list mentioned in the preceding sentence does not alter the responsibility of the **Contractor** to complete all Work in accordance with the Contract Documents. When the **Design Professional** on the basis of an inspection determines that the Work or designed portion thereof is substantially complete and the other conditions have been met, the **Design Professional** will then prepare a certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the **City** and the **Contractor** for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the **Contractor** shall complete the items listed therein. The certificate of Substantial Completion shall be submitted to the **City** and the **Contractor** for their

written acceptance of the responsibilities assigned to them in such certificate.

14.1.2. Within twenty-one (21) days after receipt of the certification from the **Contractor**, the **City** shall present to the **Contractor** either a written declaration that the Work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the Contract sufficient to demonstrate that the Work has not been substantially completed. The **City** may include with such list a notice setting forth a reasonable time within which the **Contractor** must achieve Substantial Completion of the Work. If the **City** fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the **Contractor's** certification within the twenty-one (21) day period, the **Contractor's** certification shall take effect as the **City's** declaration that the Work has been substantially completed.

14.2. Partial Use or Occupancy of the Premises.

14.2.1. The **City** may occupy or use any completed or partially completed portion of the Work at any stage. Such partial occupancy or use may begin whether or not the portion is substantially complete, provided that the respective responsibilities of the **City** and the **Contractor** with respect to payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work, insurance, correction of the Work, and warranties shall be established by agreement of the **City** and the **Contractor** or, absent such agreement, shall be determined by the **Design Professional** subject to the right of either party to contest such determination as provided in Article 16.

14.2.2. Immediately prior to such partial occupancy or use, the **City**, the **Contractor** and the **Design Professional** shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

14.2.3. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

14.2.4. (*Reference: M.G.L. c. 30, §39G;*). Within sixty-five (65) days after the effective date of a declaration of Substantial Completion, the **City** shall prepare and send to the **Contractor** for acceptance a Substantial Completion estimate for the quantity and price of the Work done and all but one percent (1%) retainage on that Work, including the quantity, price and all but one percent (1%) retainage for the undisputed part of each item and extra work item in dispute, but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory items and less the total periodic payments made to date for the Work. The **City** shall also deduct from the Substantial Completion estimate an amount equal to the sum of all demands for direct payment filed by Subcontractors and not yet paid to Subcontractors or deposited in joint accounts pursuant to M.G.L. c. 30, §39F.

14.2.5. (*Reference: M.G.L. c. 30, §39G*). If the **City** fails to prepare and send to the **Contractor** any Substantial Completion estimate required by the provisions herein on or before

the date specified, the **City** shall pay to the **Contractor** interest on the amount which would have been due to the **Contractor** pursuant to such Substantial Completion estimate at the rate of three (3) percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston from such date to the date on which the **City** sends that Substantial Completion estimate to the **Contractor** for acceptance or to the date of payment therefor, whichever occurs first. The **City** shall include the amount of such interest in the Substantial Completion estimate.

14.2.6. (*Reference: M.G.L. c. 30, §39G*). Within fifteen (15) days after the effective date of the declaration of Substantial Completion, the **City** shall send to the **Contractor** by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory items, and unless delayed by causes beyond its control, the **Contractor** shall complete all such items within forty-five (45) days after the receipt of such list or before the date for final payment and acceptance, whichever is later. If the **Contractor** fails to complete such Work within such time, the **City** may, subsequent to seven (7) days' written notice to the **Contractor** by certified mail, return receipt requested, terminate the Contract and complete the incomplete or unsatisfactory items and charge the cost of same to the **Contractor**.

14.3. Final Inspection.

14.3.1. Upon written notice from the **Contractor** that the entire Work or an agreed portion thereof is complete, the **Design Professional** will make a final inspection with the **City** and the **Contractor** and will notify the **Contractor** in writing of all particulars which this inspection reveals that the Work is incomplete or defective. The **Contractor** shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

ARTICLE 15: GUARANTEES AND WARRANTIES

15.1. In General.

15.1.1. All guarantees and warranties specifically called for by the Specifications shall expressly run to the benefit of the **City**.

15.2. Warranties.

15.2.1. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof, unless otherwise provided in the certificate of Substantial Completion.

15.2.2. The **Contractor** warrants that the materials and equipment furnished under the Contract will be new and of recent manufacture unless otherwise specified, and that all Work will be of good quality, free from faults and defects, and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The **Contractor's** warranty excludes remedy for damage or defect caused by abuse, Modifications not executed by the **Contractor**, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the **Design Professional**, the **Contractor** shall furnish satisfactory

evidence as to the kind and quality of material and equipment.

15.2.3. The **Contractor** warrants that title to all Work covered by an application for payment will pass to the **City** either by incorporation in the construction or upon the receipt of payment by the **Contractor**, whichever occurs first, free and clear of all liens. The **Contractor** further agrees that the submission of any application for payment shall conclusively be deemed to waive all liens with respect to said Work to which the **Contractor** may then be entitled, provided that such waiver of the lien rights shall not waive the **Contractor's** right to payment for such Work.

15.2.4. The **Contractor** warrants and guarantees that title to all Work, materials, and equipment covered by any application for payment, whether incorporated in the Project or not, will pass to the **City** no later than the time of payment free and clear of all liens.

15.2.5. No materials or supplies for the Work shall be purchased by the **Contractor** or Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The **Contractor** warrants that it has good title to all materials and supplies used by it in the Work, free from all liens.

15.2.6. The **Contractor** shall indemnify and hold the **City** harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workers, mechanics, material persons, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. The **Contractor** shall at the **City's** request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the **Contractor** fails to do so, then the **City** may, after having served written notice on the **Contractor** either pay unpaid bills, of which the **City** has written notice, direct, or withhold from the **Contractor's** unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the **Contractor** shall be resumed, in accordance with the terms of this

Contract, but in no event shall the provisions of this sentence be construed to impose any obligations on the **City** to either the **Contractor** or its surety. In paying any unpaid bills of the **Contractor**, the **City** shall be deemed the agent of the **Contractor** and any payment so made by the **City** shall be considered as payment made under the Contract by the **City** to the **Contractor** and the **City** shall not be liable to the **Contractor** for any such payment made in good faith.

15.3. Extended Warranties and Guarantees.

15.3.1. Any defective Work that is either corrected or replaced will be warranted and guaranteed for a period of three (3) years from the date of such correction or replacement.

ARTICLE 16: CLAIMS

16.1. In General.

16.1.1. Written Notice. A Claim must be made by written notice to the other party.

16.1.2. Content of Notice. The notice must include all written supporting data.

16.1.3. Burden of Proof. The party making the Claim must substantiate the Claim.

16.2. Time Limits on Claims.

16.2.1. Unless otherwise provided, all Claims must be made within twenty-one (21) days after the occurrence of the event giving rise to such Claim or within twenty-one (21) days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Any change or addition to a previously made Claim shall be made by a written notice within the twenty-one-day period in order to be valid.

16.3. Continuing Contract Performance.

16.3.1. Pending final resolution of a Claim including arbitration, unless otherwise agreed in writing, the **Contractor** shall proceed diligently with performance of the Contract and the **City** shall continue to make payments in accordance with the Contract Documents.

16.4. Types of Claims.

16.4.1. Claims for Differing Subsurface or Latent Physical Conditions. (*Reference: M.G.L. c. 30, §39N;*). If, during the progress of the Work, the **Contractor** or the **City** discovers that the actual subsurface or latent physical conditions encountered at the Site differ substantially or materially from those shown on the Plans or indicated in the Contract Documents, either the **Contractor** or the **City** may request an equitable adjustment in the Contract Sum of the Contract applying to Work affected by the differing Site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a **Contractor**, or upon its own initiative, the **City** shall make an investigation of such physical conditions, and if they differ substantially or materially from those shown on the Plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Plans and Contract Documents and are of such a nature as to cause an increase or decrease in the cost of performance of the Work or a change in the construction methods required for the performance of the Work which results in an increase or decrease in the cost of the Work, the **City** shall make an equitable adjustment in the Contract Sum and the Contract shall be modified in writing accordingly.

16.4.2. Claims for Additional Cost. If the **Contractor** claims that any acts or omissions of the **City** or the **Design Professional**, including any instructions or orders, whether oral, written, by drawings, or otherwise, involve extra cost or time, and the **Contractor** has not received a written acknowledgment by the **City** or the **Design Professional** that extra payment will be made or time extended on account thereof, the **Contractor** shall promptly so notify the

Design Professional in writing of such Claim and shall proceed with the Work relating to such Claim and all rights of both parties with respect to such Claim shall be deemed to have been reserved. No Claim by the **Contractor** on account of such acts, omissions, instructions, or orders shall be valid unless the **Contractor** has so notified the **Design Professional** before proceeding.

16.4.2.1. Under no circumstances shall a Claim be made for additional cost where adverse weather conditions are the basis for the Claim.

16.4.3. Claims for Additional Time. If the **Contractor** wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The **Contractor** shall have the burden of demonstrating the effect of the claimed delay on the Contract Time and shall furnish the **Design Professional** with such documentation relating thereto as the **Design Professional** may reasonably require. Under no circumstances shall the **Contractor** make a Claim for an increase in the Contract Time due to a change in the **Contractor's** early completion date. If the increase in the Contract Time extends beyond the Contract Time established by the **City**, only the time that so extends beyond the Contract Time shall be reviewed and considered. In the case of a continuing delay, only one Claim is necessary.

16.4.3.1. Under no circumstances shall a Claim be made for additional time where adverse weather conditions are the basis for the Claim.

16.4.4. Claims for Injury to Person or Damage to Property. Should either party to the Contract suffer injury to person or damage to property because of any error, omission, or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, a Claim will be made in writing to the other party within twenty-one (21) days of the occurrence of the act giving rise to the injury or damage.

16.5. Review of Claims.

16.5.1. Initial Referral. All Claims, the bases of which arise prior to final payment or the earlier termination of the Contract, shall be referred initially to the **Design Professional** for action as provided herein.

16.5.2. Time Period and Action. The **Design Professional** shall review Claims and shall do one of the following within fourteen (14) days of receipt of the Claim:

16.5.2.1. defer any action with respect to all or any part of a Claim for the purpose of requesting and receiving additional information from either party;

16.5.2.2. decline in writing to render a decision for any reason which it deems appropriate (including, but not limited to, the fact that the Claim involves allegations of fault on the part of the **Design Professional**); or

16.5.2.3. render a decision on all or a part of the Claim.

16.5.3. If the **Design Professional** requests additional information, the **Design Professional** shall take action with respect to the Claim no later than fourteen (14) days after receipt of the additional information. The **Design Professional** shall notify the parties in writing of its disposition of such Claim. If the **Design Professional** renders a decision or declines to render a decision, either party may proceed in accordance with paragraph 16.7.

16.6. Decisions.

16.6.1. Decisions by the City or the Design Professional. (*Reference: M.G.L. c. 30, §39P;*). In every case in which this Contract requires the **City**, any official, or its **Design Professional** to make a decision on interpretation of the Specifications, approval of equipment, material or any other approval, or progress of the Work, the decision shall be made promptly and, in any event, no later than fourteen (14) days after the written submission for decision; but if such decision requires extended investigation and study, the **City**, the official, or the **Design Professional** shall, within fourteen (14) days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty-day period and the date by which the decision will be made.

16.6.2. When Decision of the Design Professional is Final and Binding. The decision of the **Design Professional** shall be final and binding on the parties, unless a party files suit or a demand for arbitration within thirty (30) days after the date of the decision.

16.6.3. When Decision of the Design Professional is Not Final and Binding. (*Reference: M.G.L. c. 30, §39J*). Notwithstanding any contrary provision of this Contract, no decision by the **City** or by the **Design Professional** on a dispute, whether of fact or of law, arising under said Contract shall be final or conclusive if such decision is made in bad faith, fraudulently, capriciously, arbitrarily, is unsupported by substantial evidence, or is based upon error of law.

16.6.4. Resolved Claims. If a Claim is resolved, the **Design Professional** shall obtain or prepare the appropriate documentation and provide the **City** and the **Contractor** with a copy of same.

16.7. Arbitration.

16.7.1. Controversies and Claims Subject to Arbitration. Any controversy or Claim arising out of or related to the Contract, or the breach thereof, shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator or arbitrators may be entered in any court having jurisdiction thereof, except controversies or Claims relating to aesthetic effect, subject to the provisions of paragraph 16.7.7. In any such arbitration in which the amount stated in the demand is \$100,000 or less, the American Arbitration Association shall

appoint a single arbitrator in accordance with such Rules, who shall be a lawyer. In any such arbitration in which the amount stated in the demand is in excess of \$100,000, the demand shall include the name of an arbitrator appointed by the claimant. The respondent shall appoint a second arbitrator and shall notify the claimant in writing of such appointment within thirty (30) days of receipt of the demand, failing which the matter shall be decided by the arbitrator named in the claimant's demand. Within thirty (30) days after the claimant's receipt of notice of the appointment of the second arbitrator, the two arbitrators shall appoint a neutral arbitrator and shall notify the parties in writing of such appointment, failing which either party may apply to the American Arbitration Association to appoint such neutral arbitrator. If such neutral arbitrator is appointed by the American Arbitration Association, he or she shall be a lawyer.

16.7.2. Rules for Arbitration. If the neutral arbitrator is appointed by the American Arbitration Association, the said Association shall administer the arbitration and its Construction Industry Arbitration Rules shall govern all aspects of the proceeding including the enforcement of any award. If the neutral arbitrator is not appointed by the American Arbitration Association, then the panel of arbitrators shall act as the administrator of the arbitration but the Construction Industry Arbitration Rules of the Association shall nonetheless govern all aspects of the proceeding, including the enforcement of any award, provided however that the arbitration panel shall have all of the powers and duties conferred on the Association pursuant to said rules. In addition, the following rules shall govern the selection of arbitrators and the proceedings:

16.7.2.1. Neither party may appoint as arbitrator an employee or an owner of that party, nor the parent, spouse, or child of an employee or owner of that party.

16.7.2.2. After the neutral arbitrator has been appointed, neither party may engage in *ex parte* communication with any arbitrator.

16.7.3. When Arbitration May Be Demanded. Demand for arbitration of any Claim, the basis of which arises prior to final payment or the earlier termination of the Contract may not be made before the earlier of (1) the date on which the **Design Professional** has rendered a written decision on the Claim or has notified the parties in writing that such decision will not be rendered or (2) forty-five (45) days following receipt by the **Design Professional** of a written request for a decision sent by registered or certified mail to both the **Design Professional** and the other party to this Contract.

16.7.3.1. In no event shall a demand for arbitration be made after the date when the institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations.

16.7.4. Limitation on Consolidation or Joinder. No arbitration arising out of or relating to the Contract Documents shall include, by consolidation or joinder or in any other manner, the **Design Professional**, the **Design Professional's** employees or consultants, except by written consent containing specific reference to the Contract and signed by the **Design**

Professional, the **City**, the **Contractor**, and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the **City**, the **Contractor**, a separate contractor, and other persons substantially involved in a common question of fact or law whose presence is required if complete relief is to be accorded in arbitration. No person or entity other than the **City**, the **Contractor**, or a separate contractor shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a dispute not described therein or with a person or entity so named or described herein. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Contract shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

16.7.5. Claims and Timely Assertion of Claims. A party who files a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded. When a party fails to include a Claim through oversight, inadvertence, or excusable neglect, or when a Claim has matured or been acquired subsequently, the arbitrator or arbitrators may permit amendment.

16.7.6. Award Final. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

16.7.7. The City's Reservation of Rights. Notwithstanding any provision contained in this Article 16 or elsewhere in the Contract Documents, the **City** reserves the following rights in connection with Claims between the **City** and the **Contractor**, which rights may be exercised by the **City** unilaterally, in the **City's** sole discretion, and without the consent of the **Contractor**:

16.7.7.1. the right to institute legal action against the **Contractor** in any court of competent jurisdiction in lieu of demanding arbitration, in which case the dispute or disputes which are the subject of such action shall be decided by such court, and not by arbitration;

16.7.7.2. the right to obtain from any court of competent jurisdiction a stay of any arbitration instituted by the **Contractor**, provided that the application for such stay is made before the appointment of the neutral arbitrator in such arbitration, in which case the dispute or disputes which are the subject of such arbitration shall be decided by such court and not by arbitration;

16.7.7.3. the right to require the **Contractor** to join as a party in any arbitration between the **City** and the **Design Professional** relating to the Project, in which case the **Contractor** agrees to be bound by the decision of the arbitrator or arbitrators in such arbitration.

16.7.8. In case the **City** elects to proceed in accordance with 16.7.7.1. or 16.7.7.2. above, the word “litigation” shall be deemed to replace the word “arbitration” wherever the latter word appears in the Contract Documents.

ARTICLE 17: EMERGENCIES

17.1. In an emergency affecting the health and safety of persons or property, the **Contractor** shall act to prevent threatened damage, injury, or loss.

17.2. In emergencies affecting the health, safety, or protection of persons, the Work or property at the Site or adjacent thereto, the **Contractor**, without special instruction or authorization from the **City** or the **Design Professional**, is obligated to act to prevent threatened damage, injury, or loss. The **Contractor** shall give the **Design Professional** prompt written notice if the **Contractor** believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If the **Design Professional** determines that a change in the Contract Documents is required because of the action taken by the **Contractor** in response to such an emergency, a **Construction Change Directive** or Change Order will be issued to document the consequences of such action.

ARTICLE 18: TERMINATION OR SUSPENSION OF THE CONTRACT

18.1. Suspension by the City.

18.1.1. At any time and without cause, the **City** may suspend the Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the **Contractor** and the **Design Professional** that will fix the date on which Work will be resumed. The **Contractor** shall resume Work on the date so fixed. The **Contractor** shall be allowed an adjustment in the Contract Sum or an extension of the Contract Time, or both, directly attributable to any such suspension if the **Contractor** makes an approved Claim therefor.

18.1.2. If the Work is defective, if the **Contractor** fails to provide a sufficient number of skilled workers or suitable materials or equipment, or if the **Contractor** defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the **City** to begin and prosecute correction of such default or neglect with diligence and promptness, the **City** may correct such deficiencies, without prejudice to other remedies the **City** may have. In such case, an appropriate **Construction Change Directive** shall be issued deducting from payments then or thereafter due to the **Contractor** the cost of correcting such deficiencies including compensation for the **Design Professional's** additional services and expenses made necessary by such default, neglect, or failure and any and all direct, indirect, or consequential costs associated with the order to stop the Work. If such payments then or thereafter due the **Contractor** are not sufficient to cover such amounts, the **Contractor** shall immediately pay the difference to the **City**. The **Contractor** shall remain responsible for maintaining progress and shall not be entitled to any increase in the Contract Time or the Contract Sum.

18.2. Termination by the Contractor.

18.2.1. If, through no act or fault of the **Contractor**, a Subcontractor, or a Sub-subcontractor, the Work is suspended for a period of more than ninety (90) days by the **City**, or under an order of court or other public authority, or the **Design Professional** fails to act on any application for payment within thirty (30) days after it is submitted in proper form and content or the **City** fails for thirty (30) days to pay the **Contractor** any sum finally determined to be due, then the **Contractor** may terminate the Contract upon seven (7) days' written notice to the **City**, provided that the **City** does not remedy such suspension or failure within that time.

18.3. Termination by the City.

18.3.1. If the **Contractor** is adjudged a bankrupt, or if the **Contractor** makes a general assignment for the benefit of the **Contractor's** creditors, or if a receiver is appointed on account of the **Contractor's** insolvency, or if the **Contractor** persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if the **Contractor** fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction or disregards an instruction, order, or decision of the **Design Professional**, or otherwise is guilty of substantial violation of any provision of the Contract, then the **Contractor** shall be in default, and the **City** may, without prejudice to any other right or remedy and upon written notice to the **Contractor**, take possession of all materials, tools, appliances, equipment, construction equipment and machinery and vehicles, offices and other facilities on the Project Site, and all materials intended for the Work, wherever stored, and, seven (7) days after such notice, may terminate the employment of the **Contractor**, accept assignment of any or all subcontracts pursuant to Paragraph __, and finish the Work by whatever method the **City** may deem expedient. The **City** shall be entitled to collect from the **Contractor** all direct, indirect, and consequential damages suffered by the **City** on account of the **Contractor's** default, including without limitation additional services and expenses of the **Design Professional** made necessary thereby. The **City** shall be entitled to hold all amounts due to the **Contractor** at the date of termination until all of the **City's** damages have been established, and to apply such amounts to such damages.

18.3.2. (*Reference:* Somerville Municipal Code Chapter 2.117, Section 2.117.110C). In the event the **Contractor** or any of its agents or employees violates any provision of Somerville Municipal Code Chapter 2.117 that is applicable to **City** contractors in connection with the awarding, administration, or performance of the Contract, the **City** may terminate the Contract.

ARTICLE 19: AMERICANS WITH DISABILITIES ACT; (42 U.S. 12131)

19.1. On July 26, 1994, the Americans with Disabilities Act ("the Act") became effective for employers of fifteen or more employees.

19.2. The Act protects against discrimination on the basis of "disability," which is defined as a physical or mental impairment that substantially limits at least one "major life activity;" or

discrimination against an individual who has a record of such impairment; or discrimination against an individual being regarded - even if inaccurately - as having such impairment. The Act also expressly prohibits job discrimination that is based on any individual's relationship or association with a disabled person.

19.3. If the **Contractor** is subject to the Act, it must comply with its provisions.

ARTICLE 20: WRITTEN NOTICE TO THE PARTIES

20.1. In General.

20.1.1. All written communications from the **Design Professional** to the **Contractor** shall be copied to the **City**. All written communications from the **Contractor** to the **Design Professional** shall be copied to the **City**. All written communications from the **Contractor** to the **City** shall be copied to the **Design Professional**.

20.2. Addresses.

20.2.1. To the City. Written notice to the **City** shall be sent or hand-delivered to:

Purchasing Director
City of Somerville
93 Highland Avenue
Somerville, MA 02143

City Solicitor
Law Department
93 Highland Avenue
Somerville, MA 02143

Executive Director
Office of Strategic Planning & Community Development 93
Highland Avenue
Somerville, MA 02143

20.2.2. To the Contractor. Both the address given on the bid form upon which the Agreement is founded and the **Contractor's** office at or near the Site of the Work are hereby designated as places to either of which notices, letters, and other communications to the **Contractor** shall be certified, mailed, or delivered. Delivery of any notice, letter, or other communication to the **Contractor** at or depositing same in a postpaid wrapper directed to either place shall be deemed sufficient service thereof upon the **Contractor**. Written notice shall be deemed to have been duly served on the **Contractor** if it is sent or hand-delivered to any member or officer of the **Contractor**. The date of said service shall be the date of such delivery or mailing. The address may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor** and delivered to the **City** and to the **Design Professional**. Nothing herein contained shall be deemed to preclude or render inoperative the service of any

notice, letter, or other communication upon the **Contractor** personally. Moreover, any notice, letter, or other communication required under the Contract may be served on the **Contractor's** representative at job meetings. The **Contractor** shall provide the **City** with its change of address seven (7) days prior to its effective date.

20.2.3. To the Design Professional. Written notice to the **Design Professional** shall be sent or hand-delivered to the address appearing on the Project Manual. Written notice shall be deemed to have been duly served on the **Design Professional** if it is sent or hand-delivered to any member or officer of the **Design Professional**.

ARTICLE 21: MISCELLANEOUS PROVISIONS

21.1. Governing Law.

21.1.1. This Contract shall be governed by the laws of the Commonwealth of Massachusetts.

21.2. Venue.

21.2.1. Venue for any court action or proceeding shall be Middlesex County in the Commonwealth of Massachusetts only. The **Contractor**, all Subcontractors, and Suppliers waive any and all jurisdictional and venue defenses.

21.3. Successors and Assigns.

21.3.1. The **Contractor** shall not assign, in whole or in part, its rights and obligations under the Contract Documents without prior written consent of the **City**. An assignment without the prior written consent of the **City** shall not relieve the **Contractor** of its obligations thereunder.

21.3.2. The **City** and the **Contractor** respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents.

21.4. Statutory Limitation Period.

21.4.1. It is expressly agreed that the obligations of the **Contractor** hereunder arise out of contractual duties, and that the failure of the **Contractor** to comply with the requirements of the Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitations and repose. Any cause of action which the **City** may have on account of such failure shall be deemed to accrue only when the **City** has obtained actual knowledge of such failure, not before.

21.5. Rights and Remedies.

Part 1, Section 4: OTHER BID DOCUMENTS

21.5.1. Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

21.5.2. No action or failure to act by the **City**, the **Design Professional**, or the **Contractor** shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

PART 2 - SAMPLE CONSTRUCTION CONTRACT

IMPORTANT INFORMATION REGARDING CERTIFICATE OF GOOD STANDING

- Sample Contract
- Certificate of Authority
- Appendix A – Scope of Work (including Technical Specifications)
- Appendix B – Contractor's Bid Price; Form for General Bid (From Bid Book)
- Appendix C – General Terms and Conditions
- Appendix D – Insurance Requirements
- Appendix E – Wage Rates and Living Wage (From Bid Book)
- Appendix F – Certificate of Good Standing (for corporations; from Bid Book)
- Appendix G – Procurement documentation (Advertisements and Notice to Bidders)
- Appendix H – Statement of Management
- Appendix I – Performance Bond and Payment Bond, if contract over \$2000

S A M P L E C O N T R A C T

CONTRACT NUMBER

A-

PURCHASE ORDER # AND AMOUNT

BID NUMBER

OSPCD

ISSUING DEPARTMENT

FUNDING DEPARTMENT (Division)

CONTRACT PERIOD

CITY OF SOMERVILLE
MAYOR'S OFFICE OF STRATEGIC PLANNING AND COMMUNITY DEVELOPMENT

PUBLIC CONSTRUCTION CONTRACT

FOR: **Milk Row Cemetery**

CONTRACTOR: Vendor
 Address
 Town Name, MA

ACCORDING TO SPECIFICATIONS CONTAINED HEREIN

**CITY OF SOMERVILLE
OWNER-CONTRACTOR PUBLIC CONSTRUCTION AGREEMENT**

AGREEMENT made this --- day of _____, by and between the City of Somerville, a Massachusetts municipal corporation, acting by and through its Purchasing Department, with a usual address of 93 Highland Ave., Somerville, MA 02143 ("City", "Owner" or "Awarding Authority") and the following General Contractor ("Contractor" or "General Contractor"):

GENERAL CONTRACTOR:

Name:

Address:

Telephone:

Fax:

E-Mail:

PROJECT: ADA Ramps (12) at Four Locations

The work consists of the construction of twelve (12) Wheelchair Ramps to Massachusetts Architectural Access Board (AAB) standards (521 MR 21.00, effective January 27, 2006); hiring a design professional to verify that all AAB requirements have been fulfilled; and resetting crosswalk signs. Substantial completion of work shall be by September 1, 2009.

PROJECT MANAGER:

Name: Luisa Oliveira

Address: City Hall, 3rd floor, 93 Highland Avenue, Somerville, MA 02143

Telephone: 617-625-6600, x.2529 Fax: 617-625-0722

E-Mail: afranzen@somervillema.gov

DESIGN PROFESSIONAL:

Name: **Leonard Design Associates**

Address: **95 Ronald Road
Arlington, MA 02474**

Contact: Andrew Leonard

Phone: 781-641-0750

aleonard@leonarddesign.info

Profession: Architect [] Landscape Architect [X] Engineer []

FUNDING SOURCE: Federal [] State [] City [X]

THIS CONTRACT IS A:

X Public Works Contract estimated to cost more than \$10,000 subject to

Sample Contract

Part 1, Section 4: OTHER BID DOCUMENTS

the bidding requirements of G.L. c. 30, § 39M

- Public Building Contract estimated to cost under \$10,000, subject to the price quote requirements of G.L. c. 149 §44A (2)(A)
- Public Building Contract estimated to cost more than \$10,000 but less than \$25,000, subject to the written response requirements of G.L. c. 149, §44A(2)(B) of the General Laws
- Public Building Contract estimated to cost more than \$25,000 but less than \$100,000, subject to the bidding requirements of G.L. c. 149, §44A(2)(C) and G.L. c. 30, § 39M
- Public Building Contract estimated to cost more than \$100,000, subject to the bidding requirements of G.L. c. 149, §44A(D).

Section 1: CONTRACT DOCUMENTS/APPENDICES

The Contract Documents consist of this Agreement; the notice of award of the Contract; the Notice to Proceed; the entire Project Manual; Change Orders; Construction Change Directives; the Contractor's Bid and all accompanying documents; and the Design Professional's written interpretations and clarifications issued on or after the issuance of the Notice to Proceed. Shop Drawing submittals and reports or drawings utilized by the Design Professional in preparing the Contract Documents are not Contract Documents.

The following Appendices are hereby incorporated by reference as part of this Agreement.

- X Certificate of Authority
- * Appendix A - Scope of Services - Misc. Bid Documents: includes a brief description of the Project, the Plans and Technical Specifications (Plans on File) and Addenda issued during the bid process
- X Appendix B - Contractor's Bid Price; Form for General Bid
- X** Appendix C - General Conditions
- X** Appendix D - Insurance Requirements with Contractor's Insurance Certificate(s)
- X Appendix E - Wage Rates; Living Wage
- X Appendix F - Certificate of Good Standing (for corporations)

Part 1, Section 4: OTHER BID DOCUMENTS

- X Appendix G - Procurement Documentation (includes Advertisement; Notice to Bidders)
- X Appendix H - Statement of Management (over \$100,000)
- X Appendix I - Performance Bond and Payment Bond, if contract is over \$2,000
- X Appendix J - Section 3 Requirements
- X Appendix K – Laws Applicable to Federally Funded Contracts

X = Attached

* = Included in the Project Manual and incorporated herein by reference

** = Attached and also duplicated in the Project Manual

Section 2: THE CONTRACTOR'S WORK.

The Contractor's "Work" refers to the services and the entire completed construction or the various separately identifiable parts thereof required by the Contract Documents, including all labor, materials, and equipment furnished, furnished and incorporated into the Project, or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

Section 3: PROJECT DATES.

(a) Contract Period: The Contract shall begin on September 1, 2014 and end on June 1, 2015.

(b) Date of Commencement of Work: The Date of Commencement of the Work shall be stipulated by a written Notice to Proceed given by the City to the Contractor.

(c) Date of Substantial Completion: The Contractor shall achieve Substantial Completion of the Work on or before _____ or --- calendar days after the Date of Commencement of the Work, time being of the essence. Substantial Completion means that the Work has been completed and the Site or the facility is opened for full and intended public use, except for minor incomplete or unsatisfactory items that do not materially impair the usefulness of the Work. The Design Professional shall decide what constitutes "minor," "incomplete," "unsatisfactory," and "materially" and the Design Professional's decision shall be final.

(d) Date of Final Completion:
The Date of Final Completion shall be _____.

Section 4. CONTRACT SUM/LIQUIDATED DAMAGES

- (a) Contract Sum: The Contract Sum shall be \$_____ .
- (b) Liquidated Damages: The Contractor and the City agree to a Liquidated Damages sum of \$250.00 per calendar day.

SIGNATURE PAGE FOLLOWS

Part 1, Section 4: OTHER BID DOCUMENTS

IN WITNESS WHEREOF, the City and the Contractor have executed this Contract as a sealed instrument as of the date first written above.

CITY OF SOMERVILLE

I hereby certify that an unencumbered balance of \$_____ is available for this Contract and I further certify that the sum of \$_____ is hereby encumbered against the appropriate account for the purposes of this contract.

Edward Bean, City Auditor

Joseph A. Curtatone
Mayor

Michael F. Glavin, OSPCD
Executive Director

Angela M. Allen, Purchasing Director

Approved as to form:

Francis X. Wright, Jr., City Solicitor

VENDOR:

Signature of Authorized Agent of Vendor

Printed Name: _____
Title: _____

Vendor Address: _____

Federal Tax ID: # _____

FOR CORPORATIONS ONLY:

Clerk's Signature

Clerk's Name

SAMPLE CERTIFICATE OF AUTHORITY

____, 2014.
(Contract Date)

At a meeting of the directors of _____ duly
(Name of Corporation)
called and held at _____ on _____, 2010.
(Address) (Date)

which a quorum was present and acting, it was voted that _____
(Name)

the _____ of this corporation is hereby authorized and empowered to
(Office)

make, enter into, sign, seal and deliver on behalf of this corporation a contract for

_____ with the City of Somerville, Mayor's (Describe Service)

Office of Strategic Planning and Community Development. I do hereby certify that the above
is a true and correct copy of the record that said vote has not been amended or repealed and is in
full force and in effect at of this date, and that _____ is duly elected
(Name)

_____ of this corporation.
(Office)

(Clerk) (Secretary) of the Corporation

Attest:

(Affix Corporation Seal Here)

APPENDIX A
Scope of Services – Miscellaneous Bid Documents

Includes a brief description of the project
The Plans and Technical Specifications (Plans on File)
And all addenda issued during the bid process.

APPENDIX B
Contractor's Bid Price - Form for General Bid
(From Bid Book)

APPENDIX C
General Conditions
(From Bid Book)

**APPENDIX D
INSURANCE REQUIREMENTS**

**APPENDIX D - INSURANCE REQUIREMENTS
INSURANCE SPECIFICATIONS**

INSURANCE REQUIREMENTS FOR AWARDED VENDOR ONLY:

Prior to commencing performance of any work or supplying materials or equipment covered by these specifications, the contractor shall furnish to the Office of the Purchasing Director a Certificate of Insurance evidencing the following:

A. GENERAL LIABILITY - Comprehensive Form

Bodily Injury Liability.....\$ Two Million

Property Damage Liability.....\$ Two Million

**B. COVERAGE FOR PAYMENT OF WORKER'S COMPENSATION BENEFIT
PURSUANT TO CHAPTER 152 OF THE MASSACHUSETTS GENERAL LAWS
IN THE AMOUNT AS LISTED BELOW:**

WORKER'S COMPENSATION.....\$ Statutory

EMPLOYERS' LIABILITY.....\$ Statutory

C. AUTOMOBILE LIABILITY INSURANCE AS LISTED BELOW:

AGGREGATE.....\$ One Million

1. A contract will not be executed unless a certificate (s) of insurance evidencing above-described coverage is attached.

2. Failure to have the above-described coverage in effect during the entire period of the contract shall be deemed to be a breach of the contract.

3. All applicable insurance policies shall read:

"CITY OF SOMERVILLE" as a certificate holder and as an additional insured for general liability only along with a description of operation in the space provided on the certificate.

Certificate Should Be Made Out To:

City Of Somerville

Purchasing Department

93 Highland Avenue

Somerville, Ma. 02143

Note: If your insurance expires during the life of this contract, you shall be responsible to submit a new certificate(s) covering the period of the contract. No payment will be made on a contract with an expired insurance certificate.

APPENDIX E
PREVAILING WAGE RATES
AND LIVING WAGE FORM

PREVAILING WAGE RATES

INSERT MANUALLY



SOMERVILLE LIVING WAGE ORDINANCE CERTIFICATION FORM
CITY OF SOMERVILLE CODE OF ORDINANCES SECTION 2-397 et seq¹

Instructions: This form shall be included in all Invitations for Bids and Requests for Proposals which involve the furnishing of labor, time or effort (with no end product other than reports) by vendors contracting or subcontracting with the City of Somerville, where the contract price meets or exceeds the following dollar threshold: \$10,000. If the undersigned is selected, this form will be attached to the contract or subcontract and the certifications made herein shall be incorporated as part of such contract or subcontract. **Complete this form and sign and date where indicated below on page 2.**

Purpose: The purpose of this form is to ensure that such vendors pay a “Living Wage” (defined below) to all covered employees (i.e., all employees except individuals in a city, state or federally funded youth program). In the case of bids, the City will award the contract to the lowest responsive and responsible bidder paying a Living Wage. In the case of RFP’s, the City will select the most advantageous proposal from a responsive and responsible offeror paying a Living Wage. In neither case, however, shall the City be under any obligation to select a bid or proposal that exceeds the funds available for the contract.

Definition of “Living Wage”: For this contract or subcontract, as of **7/1/2014** “Living Wage” shall be deemed to be an hourly wage of no less than **\$12.05** per hour. From time to time, the Living Wage may be upwardly adjusted and amendments, if any, to the contract or subcontract may require the payment of a higher hourly rate if a higher rate is then in effect.

CERTIFICATIONS

1. The undersigned shall pay no less than the Living Wage to all covered employees who directly expend their time on the contract or subcontract with the City of Somerville.
2. The undersigned shall post a notice, (copy enclosed), to be furnished by the contracting City Department, informing covered employees of the protections and obligations provided for in the Somerville Living Wage Ordinance, and that for assistance and information, including copies of the Ordinance, employees should contact the contracting City Department. Such notice shall be posted in each location where services are performed by covered employees, in a conspicuous place where notices to employees are customarily posted.
3. The undersigned shall maintain payrolls for all covered employees and basic records relating hereto and shall preserve them for a period of three years. The records shall contain the name and

¹Copies of the Ordinance are available upon request to the Purchasing Department.

Part 1, Section 4: OTHER BID DOCUMENTS

address of each employee, the number of hours worked, the gross wages, a copy of the social security returns, and evidence of payment thereof and such other data as may be required by the contracting City Department from time to time.

4. The undersigned shall submit payroll records to the City upon request and, if the City receives information of possible noncompliance with the provisions the Somerville Living Wage Ordinance, the undersigned shall permit City representatives to observe work being performed at the work site, to interview employees, and to examine the books and records relating to the payrolls being investigated to determine payment of wages.

5. The undersigned shall not fund wage increases required by the Somerville Living Wage Ordinance by reducing the health insurance benefits of any of its employees.

6. The undersigned agrees that the penalties and relief set forth in the Somerville Living Wage Ordinance shall be in addition to the rights and remedies set forth in the contract and/or subcontract.

CERTIFIED BY:

Signature: _____
(Duly Authorized Representative of Vendor)

Title: _____

Name of Vendor: _____

Date: _____

INSTRUCTIONS: PLEASE POST

**NOTICE TO ALL EMPLOYEES
REGARDING PAYMENT OF LIVING WAGE**

Under the Somerville, Massachusetts' Living Wage Ordinance (Ordinance No. 1999-1), any person or entity who has entered into a contract with the City of Somerville is required to pay its employees who are involved in providing services to the City of Somerville no less than a "Living Wage".

The Living Wage as of **7/1/2013** is **\$11.89** per hour. The only employees who are not covered by the Living Wage Ordinance are individuals in a Youth Program. "Youth Program" as defined in the Ordinance, "means any city, state or federally funded program which employs youth, as defined by city, state or federal guidelines, during the summer, or as part of a school to work program, or in any other related seasonal or part-time program."

For assistance and information regarding the protections and obligations provided for in the Living Wage Ordinance and/or a copy of the Living Wage Ordinance, all employees should contact the City of Somerville's Purchasing Department directly.

APPENDIX F
CERTIFICATE OF GOOD STANDING
(FOR CORPORATIONS)

INSERT DOCUMENT FROM BID BOOK HERE

Certificate of Good Standing: If the bidder is a corporation, a Certificate of Good Standing should accompany the bid. Certificate of Good Standing available online at:
http://corp.sec.state.ma.us/corp/Certificates/Certificate_Request.asp
or call Tel: (617) 727-9640 for more information.

CERTIFICATE OF GOOD STANDING

TO: Vendor

FROM: Purchasing Department

RE: **CERTIFICATE OF GOOD STANDING**

The **Awarded Vendor** must comply with our request for a **CURRENT “Certificate of Good Standing”**.

If you require information on how to obtain the “Certificate of Good Standing” or Certificate of Registration (Foreign Corporations) from the Commonwealth of Massachusetts, please call the Secretary of State’s Office at (617) 727-2850 (Press #1) located at One (1) Ashburton Place, 17th Floor, Boston, MA 02133 or you may access their web site at: www.MA.GOV/SEC/COR

If your company is incorporated outside of Massachusetts and therefore is a “foreign corporation”, but is registered to do business in Massachusetts, please comply with our request for the Certificate of Registration from the Commonwealth of Massachusetts. If your company is a foreign corporation, but is not registered to do business in Massachusetts, please provide the Certificate of Good Standing from your state of incorporation.

Please note that without the above certificate (s), the City of Somerville cannot execute your contract.

IMPORTANT NOTICE

Requests for Certificates of Good Standing by mail may take a substantial amount of time. A certificate may be obtained immediately in person at the Secretary’s Office at the address above. Also, at this time, the Secretary of State’s Office may not have your current annual report recorded. If this is the case, and you are therefore unable to obtain the Certificate of Good Standing, please forward a copy of your annual report filing fee check with your signed contracts. Please forward your original Certificate of Good Standing to the Purchasing Department upon receipt.

Thank You,

Purchasing Director

APPENDIX G
PROCUREMENT DOCUMENTATION
ADVERTISEMENTS, NOTICE TO BIDDERS, ETC.

Part 1, Section 4: OTHER BID DOCUMENTS

Sample Contract

APPENDIX H
STATEMENT OF MANAGEMENT
FOR CONTRACTS OVER \$100,000

STATEMENT OF MANAGEMENT

In accordance with M.G.L. Chapter 30, Section 39R, the undersigned successful bidder states that its system of internal accounting controls and that of its subsidiaries reasonably assure (1) that transactions are executed in accordance with management's general and specific authorization; (2) that transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles, and to maintain accountability for assets; (3) that access to assets is permitted only in accordance with management's general or specific authorization, and (4) that the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

Executed this _____ day of _____ 2014

On behalf of _____
(Successful bidder name)

(Address and telephone of successful bidder)

(Name and title of person signing statement)

By: _____
(Signature)

CERTIFIED PUBLIC ACCOUNTANT STATEMENT

In accordance with M.G.L. 30, Section 39R I, _____
a certified public accountant, state that I have examined the above Statement of Management on internal accounting controls, and that in my opinion (1) the representations of management are consistent with the result of management's evaluation of the system of internal accounting controls; and (2) that such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the above referenced successful bidder's financial statements.

(Signature)

Part 1, Section 4: OTHER BID DOCUMENTS

(Business name, address and telephone number)

Sample Contract

APPENDIX I
PERFORMANCE BOND AND PAYMENT BOND
FOR CONTRACTS OVER \$2000

PERFORMANCE BOND

We, the undersigned,

_____,
(Name of Contractor)

_____,
(Address of Contractor)

_____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____,
(Name of Surety)

_____, (Address of Surety)

hereinafter called Surety, are held and firmly bound unto CITY OF SOMERVILLE, 93

Highland Avenue Avenue, Somerville, MA 02139, hereinafter called Owner, in the penal

sum of _____ Dollars

(\$____) in lawful money of the United States, for the payment of which sum well and truly to

be made. We hereby jointly and severally bind ourselves, our heirs, executors,

administrators, successors, and assigns.

The condition of this obligation is such that the Principal entered into a certain contract with the Owner, dated the ____ day of ____, 20__, a copy of which is attached hereto and made a part hereof, for the project known as Zero New Washington Street Community Park and Off-Leash Recreation Area and the Principal and Surety bind themselves to the Owner for the performance of the contract.

Now, therefore, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the

Sample Contract

Part 1, Section 4: OTHER BID DOCUMENTS

original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety and during the guaranty period set forth in the contract, and if it shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by a reason of failure to do so, and shall reimburse and repay the Owner all outlay and expenses which the Owner may incur in making good any default, then this obligation shall be void; otherwise, this bond shall remain in full force and effect; provided, further, that the said Surety for value received hereby agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder of the specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications. Provided, further, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed on this ____day of ____,2014.

CONTRACTOR AS PRINCIPAL

SURETY

(Signature)
Name and Title:

(Signature)
Name and Title:

SEAL

SEAL

Payment Bond

We, the undersigned,

_____,
(Name of Contractor)

_____,
(Address of Contractor)

_____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____,
(Name of Surety)

_____, (Address of Surety)

hereinafter called Surety, are held and firmly bound unto CITY OF SOMERVILLE, 93
Highland Avenue, Somerville, MA 02139, hereinafter called Owner, in the penal sum of
Dollars

(\$____) in lawful money of the United States, for the payment of which sum well and truly to
be made. We hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors, and assigns.

The condition of this obligation is such that the Principal entered into a certain
contract with the Owner, dated the ____ day of ____, 20__, a copy of which is attached
hereto and made a part hereof, for the project known as Zero New Washington Street
Community Park and Off-Leash Recreation Area.

Now, therefore, if the Principal shall promptly make payment to all persons, firms,
subcontractors, and corporations furnishing materials for or performing labor in the
prosecution of the work provided for in such contract, and any authorized extension or

Part 1, Section 4: OTHER BID DOCUMENTS

modification thereof, including all amounts due for materials used in connection with the work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise this bond is remain in full force and effect. Provided, further, that the said Surety for value received hereby agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder of the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

Provided, further, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed on this __ day of __, 2014.

CONTRACTOR AS PRINCIPAL

SURETY

(Signature)

(Signature)

Name and Title:

Name and Title:

SEAL

SEAL

MEETING OF THE BOARD OF DIRECTORS

CERTIFICATE OF AUTHORITY

____20

At a meeting of the Directors of the
_____ duly called and held at _____ on the __ day of ____20__, at which a quorum
was present and acting, it was

VOTED THAT

the _____ of this corporation is hereby authorized and empowered to make, enter into, sign,
seal and deliver, in behalf of this corporation, a Contract for Site Improvements at Perry Park
and Stone Place Park with the City of Somerville, and performance and payment bonds (each
in the full amount of the Contract) in connection with such Contract.

I DO HEREBY CERTIFY that the above is a true and correct copy of the record, that
said vote has not been amended or repealed and is in full force and effect on this date, and
that _____ is duly elected ____ of this corporation.

ATTEST:

Clerk or Secretary of the Corporation

(Affix Corporate Seal Here)

PART 3 - TECHNICAL SPECIFICATIONS

Part 3: TECHNICAL SPECIFICATIONS

PART 3: TECHNICAL SPECIFICATIONS

of Pages

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LIST OF CONTRACT DRAWINGS

Sheet No.	Sheet Title
1	Site Plan and Details

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01 11 00 - SUMMARY OF WORK

1.01 SCOPE OF WORK

- A. The project consists of site work for the renovation and rehabilitation of a portion of an existing historic burial ground in Somerville, Massachusetts. Generally, the work will consist of:
 - 1. Site preparation including: the removal of paving, vegetation and miscellaneous items; and salvage and relocation of various items.
 - 2. Earthwork including stripping topsoil, providing fill, excavation and backfilling, compaction, and grading.
 - 3. Installation of bituminous concrete paving and various other items.
 - 4. Rehabilitation of tomb facade.
 - 5. Installation and maintenance of lawns.
- B. All work must meet the Secretary of Interior's "Standards for the Treatment of Historic Properties".

1.02 SCHEDULING OF WORK

- A. Maintain access in public ways and to the existing buildings in the area at all times. It is mandatory that maximum protection to the life and safety of all users of the site and buildings be provided at all times.
- B. Cooperate and coordinate work in all areas with City personnel who will be performing routine duties in and around the project area.
- C. The Contractor's attention is directed to the Bid Form that states the amount of time allowed to complete this construction. The Contractor shall submit in writing to the Landscape Architect, within 7 calendar days after receipt of the Contract, evidence that materials that are not readily available have been ordered and within 20 calendar days confirmation by the manufacturer of these orders with dates for delivery. Failure to comply with these ordering requirements will nullify any request for an extension of time to complete the project.
- D. Should the Contractor fail to complete the Work within the stipulated time frame, the Owner will deduct the amount of Landscape Architect compensation required for additional services from final payment to Contractor.

PART 2 - MATERIALS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 23 00 - ALTERNATES

1.01 GENERAL

- A. Each bidder shall submit with his bid alternate prices stating the difference in price, addition or deduction, from the base bid for substituting, omitting or changing the following materials or construction from that specified or shown on the Drawings.
- B. The difference in prices shall include all omissions, additions, and adjustments of all trades as may be necessary because of each change, substitution or omission.
- C. The Owner may accept ADD or DEDUCT alternates at time of bid for inclusion in the general contract. Alternates not accepted at time of bid shall remain in full force and effect for Owner's acceptance during the full term of the Contract, or until construction operations have progressed to the point where the addition of the alternate will result in changes to the work completed or materials ordered by the Contractor.

1.02 ALTERNATE NO. 1: DEDUCT WORK ASSOCIATED WITH TOMB NO. 1

- A. State the amount to be DEDUCTED to the base bid for rehabilitating the tomb facade at tomb No. 1 as shown on the Drawings complete in place including all associated site preparation and salvage, earthwork, unit masonry, conservation treatment for period stone, seeding and all other work necessary for a complete installation.

1.03 ALTERNATE NO. 2: DEDUCT WORK ASSOCIATED WITH TOMB NO. 2

- A. State the amount to be DEDUCTED to the base bid for rehabilitating the tomb facade at tomb No. 2 as shown on the Drawings complete in place including all associated site preparation and salvage, earthwork, unit masonry, conservation treatment for period stone, seeding and all other work necessary for a complete installation.

END OF SECTION

SECTION 01 40 50 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 RELATED WORK

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

1.02 WORK INCLUDES

- A. Execute cutting (including excavation), filling or patching of work required to:
 - 1. Make several parts fit properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to contract requirements.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Install specified work in existing construction.
- B. In addition to Contract requirements, upon written instructions of Landscape Architect:
 - 1. Uncover work to provide for observation of covered work.
 - 2. Remove samples of installed materials for testing.
 - 3. Remove work to provide for alteration of existing work.
- C. Do not endanger work by cutting or altering work or any part of it.
- D. Do not cut or alter work of another contractor without written consent of Landscape Architect.

1.03 SUBMITTALS

- A. Prior to cutting which affects structural safety of Project, or work of another contractor, submit written notice to Landscape Architect requesting consent to proceed with cutting, including:
 - 1. Project identification.
 - 2. Description of affected work.
 - 3. Necessity for cutting.
 - 4. Effect on other work, on structural integrity of project.
 - 5. Description of proposed work. Designate:
 - a. Scope of cutting and patching.
 - b. Contractor and trades to execute the work.
 - c. Products proposed to be used.
 - d. Extent of refinishing.
 - 6. Alternates to cutting and patching.
 - 7. Designation of party responsible for cost of cutting and patching.
- B. Submit cost estimate prior to cutting and patching done on instruction of Landscape Architect.

- C. Should conditions of work, or schedule, indicate change of materials or methods, submit recommendation to Landscape Architect including:
 - 1. Condition indicating change.
 - 2. Recommendation for alternative materials or methods.
 - 3. Submittals as required for substitutions.
- D. Submit written notice to Landscape Architect designating time work will be uncovered, to provide for observation.

1.04 PAYMENT FOR COSTS

- A. Costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Landscape Architect: To be paid by party responsible for ill-timed, rejected or non-conforming work.
- B. Work done on instructions of Landscape Architect (by Change Order), other than defective or non-conforming work: To be paid by Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. For replacement of work removed, comply with specifications for type of work to be performed.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of work, including elements subject to movement or damage during:
 - 1. Cutting and patching.
 - 2. Excavating and backfilling.
- B. After uncovering work, inspect conditions affecting installation of new products.

3.02 PREPARATION

- A. Prior to cutting:
 - 1. Provide shoring, bracing and support as required to maintain structural integrity of project.
 - 2. Provide protection for other portions of the Project.
 - 3. Provide protection from elements.

3.03 PERFORMANCE

- A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances and finishes.

- B. Execute cutting and demolition by methods that will prevent damage to other work, and will provide proper surfaces to receive installation of repairs and new work.
- C. Execute excavating and backfilling by methods which will prevent damage to other work, prevent settlement and as specified in Section 02200, Earthwork, of these specifications.
- D. Restore work which has been cut or removed. Install new products to provide completed work in accordance with Contract requirements. Restore lawn areas damaged as a result of the work of this contract with 6" of screened topsoil and seed as specified.
- E. Refinish entire surfaces as necessary to provide an even finish.
 - 1. Continuous surfaces: to nearest intersection(s).
 - 2. Assembly: entire refinishing.
- F. Notify all utility authorities concerned for disconnection or relocation of services feeding buildings and obtain any permits necessary for disconnection and/or relocation of services and street opening permits. Cap all abandoned utilities.

END OF SECTION

SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work includes submission of specific exhibits (shop drawings, product data and samples) required by specification sections to Landscape Architect.
- B. The type of work includes the following without limiting the generality thereof:
 - 1. Progress Schedules
 - 2. Schedule of Values
 - 3. Shop drawings
 - 4. Product Data
 - 5. Samples
- C. Consult the individual Sections of the Specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

1.02 DEFINITIONS

- A. Shop Drawings: Shop drawings are original drawings prepared by the Contractor, subcontractor, sub-subcontractor, supplier or distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details.
 - 1. Prepared by qualified detailer.
 - 2. Identify details by reference to sheet and detail numbers shown on contract drawings.
 - 3. Minimum sheet size: 8-1/2"x11".
- B. Product Data:
 - 1. Manufacturer's standard schematic drawings:
 - a. Modify to delete information that is not applicable to project.
 - b. Supplement standard information to provide additional information applicable to project.
 - 2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.
 - a. Clearly mark each copy to identify pertinent materials, products or models.
 - b. Show dimensions and clearances required.
 - c. Show performance characteristics and capacities.
 - d. Show wiring diagrams and controls.
- C. Samples: Physical samples to illustrate materials, equipment or workmanship. Approved samples establish standards by which complete work is judged. Approved samples shall remain on site and not be utilized in the construction of the work unless otherwise directed by the Landscape Architect.
 - 1. Office samples: of sufficient size to clearly illustrate:

- a. Functional characteristics of product or material, with integrally related parts and attachment devices.
 - b. Full range of color samples.
2. Field samples and mock-ups:
 - a. Erect, maintain and protect at project site at location acceptable to Landscape Architect.
 - b. Construct each sample or mock-up complete including work of all trades required in finished work.
 - c. Remove as directed.

1.03 SUBMITTAL REQUIREMENTS

- A. Submit one legible reproducible transparency and four (4) opaque prints of shop drawings, and number of copies of product data and samples which Contractor requires for distribution plus two (2) copies which will be retained by Landscape Architect of required submittals identified in the respective specification sections.
- B. Accompany submittals with transmittal letter, in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. The number of shop drawing, product datum and sample submitted.
 5. Notification of deviations from Contract.
 6. Other pertinent data.
- C. Submittals shall include:
 1. Date and revision date.
 2. Project title.
 3. Names of:
 - a. Landscape Architect.
 - b. Landscape Architect's consultants.
 - c. Contractor.
 - d. Subcontractor.
 - e. Sub-subcontractor.
 - f. Supplier.
 - g. Manufacturer.
 - h. Separate detailer when pertinent.
 4. Identification of product or material.
 5. Relation to adjacent structure or material.
 6. Field dimensions, clearly identified as such.
 7. Specification section and page number.
 8. Applicable standards, such as ASTM number or Federal Specification.
 9. Identification of previously approved deviation(s) from Contract Documents.
 10. Space for Landscape Architect's approval stamp (3"x5" minimum).
 11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract.
 12. Space for General Contractor's approval stamp.

1.04 RESUBMISSION REQUIREMENTS

- A. Shop Drawings:
 - 1. Revise initial drawings as required and resubmit in accordance with submittal procedures.
 - 2. Indicate on drawings all changes that have been made in addition to those requested by the Landscape Architect.
- B. Product Data and Samples: Submit new data and samples as required for initial submittal.
- C. Make all resubmittals within five (5) business days after date of Landscape Architect's previous review.

1.05 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

- A. General Contractor will distribute copies of shop drawings and product data that carry Landscape Architect's stamp to:
 - 1. Contractor's file.
 - 2. Job site file.
 - 3. Record documents file.
 - 4. Other contractors.
 - 5. Subcontractors.
 - 6. Suppliers.
 - 7. Fabricators.
- B. Distribute samples as directed in accordance with Contract Documents.

1.06 CONTRACTOR RESPONSIBILITIES

- A. Review shop drawings, product data and samples within 5 business days prior to submission to the next level of authority.
- B. Verify:
 - 1. Field dimensions.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Compliance with Contract requirements.
- C. Coordinate each submittal with requirements of:
 - 1. The work.
 - 2. The Contract Documents.
 - 3. The work of other contractors.
- D. Notify Landscape Architect in writing prior to submission, of proposed deviations in submittals from contract requirements.
- E. Contractor's responsibility for errors and omissions in submittals or for deviations in submittals from Contract Document requirements is not relieved by Landscape Architect's review of submittals.

- F. Certify review. Transmit reviewed submittals to Landscape Architect.
- G. Do not begin any work that requires submittals without having Landscape Architect's written approval.
- H. After Landscape Architect's review, make response required and distribute copies.
- I. Submittal procedure:
 - 1. Subcontractors send submittals to General Contractor.
 - 2. General Contractor reviews and initials subcontractor's submittals for compliance with scope, coordination and integration with the work of all other contractors.
 - 3. General Contractor transmits his reviewed copies of assigned contractor's submittals to Landscape Architect.
 - 4. General Contractor retains copy of submittals after review by Landscape Architect and distributes copies to submitting contractor and to other contractors for coordination and integration.
 - 5. General Contractor: Enforce resubmission requirements.

1.07 LANDSCAPE ARCHITECT'S DUTIES

- A. Review submittals with reasonable promptness.
- B. Review for design concept of project and compliance with information given in Contract Documents.
- C. Review all requests for proposed deviations. Obtain Owner's concurrence and respond to Contractor's request.
- D. Affix stamp, date and initials or signature certifying to review of submittal, and with instructions for Contractor response.
- E. Return submittals to Contractor for response or distribution.

1.08 LIMITATION OF SUBMITTALS

- A. The Contractor may submit shop drawings, samples and product data for Landscape Architect's review. These documents shall detail the equipment, material and fabrication that Contractor intends to utilize in connection with the performance of the work. Landscape Architect's review of these submittals is only for conformance with the design concept of the work and is not intended to be exhaustive, nor is Landscape Architect obligated to verify dimensions, quantities or the performance of any systems. Landscape Architect's review of a separate or specific item shall not be considered review or approval of an assembly of which the item is a part.
- B. The Contractor agrees that if deviations, discrepancies or conflict between shop drawings, samples and product data and the contract documents in the form of design drawings and specifications are discovered either prior to or after submittals are processed by Landscape Architect, the design drawings and specifications control shall be followed.

PART 2 - MATERIALS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 45 29 - TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall employ and pay for the services of an Independent Testing Laboratory acceptable to the Landscape Architect to perform specified services and testing.
 - 1. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the work in accordance with the Contract.
- B. Related requirements in other documents:
 - 1. Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities: Conditions of the Contract.
- C. Consult the individual Sections of the Specifications for the specific requirements under those sections and for further details and descriptions of the requirements.

1.02 QUALIFICATION OF LABORATORY

- A. Meet "Recommended Requirements for Independent Laboratory Qualification", published by American Council of Independent Laboratories, latest edition.
- B. Meet basic requirements of ASTM E329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction".
- C. Authorized to operate in State in which project is located.
- D. Submit copy of report of inspection facilities made by Materials Reference Laboratory of National Bureau of Standards during the most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- E. Testing Equipment: Calibrated at 12 month maximum intervals by devices of accuracy traceable to either: National Bureau of Standards; or Accepted values of natural physical constants.

1.03 LABORATORY DUTIES

- A. Cooperate with Landscape Architect. Provide qualified personnel promptly on notice.
- B. Acquaint Landscape Architect's personnel with testing procedures and all special conditions encountered at site.
- C. Perform specified inspections, sampling and testing of materials and methods of construction. Comply with specified standards, ASTM, other recognized authorities and as specified. Ascertain compliance with requirements of Contract Documents.
- D. Promptly notify Landscape Architect and Contractor of irregularities or deficiencies of work which are observed during performance of services.

- E. Promptly submit 4 copies of written report of each test and inspection to Landscape Architect. Include in each report:
 - 1. Date issued.
 - 2. Project title and number.
 - 3. Testing laboratory name, address and telephone number.
 - 4. Name and signature of laboratory inspector.
 - 5. Date and time of sampling or inspection.
 - 6. Record of temperature and weather conditions.
 - 7. Date of test.
 - 8. Identification of product and specification section.
 - 9. Location of sample or test in the project.
 - 10. Type of inspection or test.
 - 11. Results of tests and observations regarding compliance with Contract Documents.
 - 12. Interpretation of test results as required by Landscape Architect.
- F. Perform additional services including tests as required by Landscape Architect.

1.04 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to: Release, revoke, alter or enlarge on Contract requirements; Approve or accept any portion of the Work; or Perform any duties of the Contractor.

1.05 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel, provide access to Work and to manufacturer's operations.
- B. Secure and deliver to the laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.
- C. Provide laboratory with preliminary design mix proposed to be used for concrete and other materials mixes which require control by testing laboratory.
 - 1. Furnish product mix design to meet or exceed Contract requirements.
- D. Furnish copies of product test reports as required.
- E. Furnish incidental labor and facilities:
 - 1. To provide access to work to be tested.
 - 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
 - 3. To facilitate inspections and tests.
 - 4. For storage and curing of test samples.
- F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
- G. Make arrangements with laboratory and pay for additional samples and tests required for Contractor's convenience.

- H. Employ and pay for the services of a separate, qualified, independent testing laboratory to perform additional inspections, sampling and testing as required when initial tests indicate work does not comply with Contract Documents.
- I. Correct work which is defective or which fails to conform to the Contract Documents in accordance with the General Conditions. Corrective work shall not delay the project schedule or the work of other Contractors.
- J. Patch all surfaces and areas disturbed by testing operations.

PART 2 - MATERIALS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor, or in the event of separate contracts, the General Contractor, shall be responsible for arranging for and providing all construction facilities and temporary controls as specified herein and as required for the proper and expeditious prosecution of the Work. The Contractor shall pay all costs for such facilities and controls, unless otherwise specified, until date of substantial completion of the project.
- B. The cost of temporary water, temporary electrical and heat energy, and all expenses for temporary connections thereof, operation, maintenance and removal of same shall be paid by the Contractor.
- C. Construction operations at the site shall be in accordance with "The Manual for Accident Prevention" (AGC) and shall be subject to all applicable laws, governmental rules and regulations.
- D. At all times keep the site free from accumulation of waste materials or rubbish caused by construction operations.

1.02 TEMPORARY ELECTRICITY

- A. Provide power distribution at 120/240 volts, 3 phase, 4 wire, 60 cycle, A.D. Terminate power distribution at a central location and provide for each voltage supply complete with circuit breakers, disconnect switches and other devices, as required to protect the power supply system. Locate convenience outlets for fractional horsepower tools such as saws, drills, etc. at convenient locations to permit the use of extension cords. Provide each outlet with two 120 volt, 15 ampere, 3 wire grounded duplex receptacles.
- B. If Subcontractors, and in the event of separate contracts, Contractors and Subcontractors, require special electric power for facilities beyond that provided for herein for such items as large pumps, welding machines, special hoists, etc., they shall arrange and pay for the installation of such facilities and arrange and pay for the payment of any additional costs thereof.
- C. It is understood that, if the permanent electrical power and lighting systems are used for temporary power and lighting for construction purposes, the Contractor shall assume full responsibility for the power and lighting systems used and pay all costs for operation and restoration of the systems.

1.03 TEMPORARY WATER

- A. Provide potable water for drinking and construction purposes for all parts of the work. Keep drinking water satisfactorily cooled. All costs for arrangements, permits, installation, maintenance and water shall be paid by the Contractor.
- B. It is understood that, if parts of the permanent water systems are used as temporary facilities, the Contractor shall assume full responsibility for systems used, including cleaning and restoration.

1.04 TEMPORARY SANITARY FACILITIES

- A. Provide suitable and adequate temporary toilet facilities for the entire work force. The number and type of such facilities shall conform with labor work rules, governing codes and health requirements. Unless otherwise required, portable chemical toilets shall be serviced twice weekly, with service to include emptying tanks, recharging with germicidal and deodorizing solution, and scrubbing entire interior with a germicidal solution.

1.05 TEMPORARY HEAT

- A. Provide all heat fuel and services necessary as required to protect the work and materials against injury from dampness and cold as specified in the technical specifications. Provide approved temporary heating devices, electrical power, adequate and proper fuel, fire, enclosures, etc., as required for the work and have watchmen constantly in attendance when fires are burning. Use only UL approved equipment. Do not use open salamanders.

1.06 TEMPORARY FIRE PROTECTION

- A. Prohibit all lighting of fires about the premises and all smoking in restricted areas where posted with "NO SMOKING" signs and use due diligence to see that such prohibition is enforced. Furnish and post "NO SMOKING" signs in accordance with governing fire regulations.
- B. Do not burn debris or waste materials at the construction site. Keep and handle gasoline and other flammable liquids from approved safety cans in accordance with all applicable regulations.
- C. Properly install heaters in temporary offices and sheds to protect combustible walls, floors and roof.
- D. All tarpaulins used for any purpose shall be made of fire, water and weather resistant duck.

1.07 SECURITY

- A. Employ guard and watchman service during those hours when the Contractor is not working on the site, as deemed necessary by the Owner, or as required by government authorities.
 - 1. It is imperative that the tombs be protected during the period of time when access to the interiors of the tombs is possible. No public access will be permitted.

1.08 MEDICAL SERVICES AND FIRST AID

- A. Provide and maintain first aid facilities and ensure the availability of medical personnel for persons employed on the work.

1.09 CONSTRUCTION AIDS

- A. Provide all temporary ladders, ramps, runways, stairs, scaffolding, staging, temporary enclosures, hoists, chutes, etc. as may be required for performance of the Work. All construction aids shall comply with Federal, State and local laws and regulations.
- B. Provide weather tight temporary enclosures as required during construction to protect the Work from frost damage and to ensure suitable working conditions for all workers.

1.10 TEMPORARY CONTROLS

- A. Protect existing buildings, grounds, streets, sidewalks and utilities. Make all repairs to same if damage is done to these areas at no additional cost to the Owner.
- B. WEATHER PROTECTION: Provide protection against water, rain, wind, storm, frost or heat at all times to maintain all work, materials, apparatus and fixtures free from injury or damage. Cover all new work likely to be damaged at the end of the day's work. Remove snow and ice or otherwise protect the work from damage where the presence of snow and ice would endanger or otherwise damage work that is underway or partially complete. Repair damage to the work covered by the Contractor's failure to remove snow and ice at no additional cost to the Owner.
- C. REMOVAL OF WATER AND PROTECTION FROM FLOODING: Where required for safe and economical completion of the work, provide and maintain pumps, piping, drains or any other facility for the control and collection of ground or surface water. Provide dewatering operations such that excavations may be kept free from water so that construction work may be performed in the dry. Carry out pumping and dewatering operations in such a manner that no loss of ground will result from these operations. Take precautions to protect new and existing work from flooding during storms and other causes. Provide continuous pumping where required to protect the work and to maintain satisfactory progress. Completely raise, brace or otherwise protect pipe lines or structures not stable against uplift during construction or prior to completion.
- D. BARRIERS: Provide and maintain barricades, protection and warning lights, and other safety precautions in good condition until the completion of the part of the Work requiring such protection and then remove same. Provide warning lights at all barricades, obstructions in streets and sidewalks, and all trenches and pits on or adjacent to streets. Provide as required to insure the protection of the public as well as employees and others with duties requiring their presence on the project site.
- E. BRACING, SHEETING AND SHORING: Provide all bracing, sheeting and shoring as required for safety and the proper execution of the work. Remove same when work is complete.

1.11 TEMPORARY PROJECT SIGN

- A. One sign, giving the name of the project and the name of the Owner, the Landscape Architect, the Contractor and the various subcontractors, may be erected at the option of the Contractor in a location approved by the Landscape Architect. No other signs or advertising matter of any kind will be allowed posted, except with further approval of the Landscape Architect. Size of sign shall not exceed 12 square feet.
- B. Treat sign with sufficient sealer and maintain it in good condition throughout the life of the Contract. Remove sign when directed by the Landscape Architect.
- C. CREDIT SIGN: One painted plywood sign as shown on attached drawing SK-1. Size of sign shall be 4'-0" by 4'-0". Utilize an experienced sign painter to apply all lettering and logo. Text shall be as indicated on the drawing at the end of this Section.

D. Materials

1. Sign materials: 3/4 inch thick, APA grade MDO EXT of the required size in one piece.
 2. Paint: One coat exterior oil base primer and one coat exterior top coat equal to paint manufactured by Rust-Oleum Corp., Evanston IL; Touraine paints, Everett MA or Sherwin Williams Co., Cleveland OH. Colors shall be white for lettering and red for field. Type face to be Helvetica Bold.
 3. Fastening devices: All fastening devices shall be stainless steel or hot dip galvanized steel of a vandal resistant design.
 4. Supports: Pressure treated pine, 4x4, 12'long, 2 per sign.
- E. Secure sign rigidly to posts using fasteners as specified. Install signs in a true upright position. Check horizontal and vertical lines to insure erection of the completed members with the required dimensions. Touch up paint signs as required. Locations for signs to be determined by Landscape Architect.
- F. At completion of installation, clean all surfaces in accordance with manufacturer's recommendations.
- G. Treat sign with sufficient sealer and maintain it in good condition throughout the life of the Contract. Remove signs when directed by the Landscape Architect.

1.12 MATERIAL AND EQUIPMENT

- A. Properly store materials and equipment in accordance with the manufacturer's recommendations and in limited quantities so as not to overload the construction. Adequately cover, protect and secure materials to avoid displacement.
- B. Provide openings where required for moving in large pieces of material and equipment of all types. Close and/or restore all openings and finish them after the equipment is in place. Structural modification, if required, shall be subject to prior approval by the Landscape Architect.
- C. Protect all finished surfaces against any possible damage resulting from the conduct of work by all trades.
- D. All finished surfaces, including factory finished and job finished items shall be clean and not marred upon delivery to the Owner. The Contractor shall, without extra compensation, refinish all damaged surfaces that were inadequately protected.

1.13 TRAFFIC REGULATIONS: Conform to local regulations governing load limits of vehicles and regulation of traffic around the site.**1.14 REQUIREMENTS OF REGULATORY AGENCIES**

- A. Comply with the requirements of Federal, State and local laws, codes, regulations and authorities with regard to navigable waters, noise, air, pest and environmental pollution control and abatement.

1.15 CONSTRUCTION PROGRESS PHOTOGRAPHS

- A. Furnish and regularly deliver to the Landscape Architect three sets of 4 by 6 inch color unmounted progress photographs taken from enough locations to completely show the progress of the work [before, during and after] over each four week period. Inscribe on the reverse side of the photographs all pertinent information and description such as date, location, compass direction from which taken and the item of work photographed. Comply with Massachusetts Historical Commission's Technical Requirements for Digital Images.

PART 2 - MATERIALS (Not Used)

PART 3 - EXECUTION

3.01 PROTECTION OF LAND RESOURCES

- A. General: Preserve land resources within project boundaries and outside limits of work as may be affected under work of this Contract in their natural condition, or restore to a condition, after completion of construction, that will appear to be natural. Confine construction activities to areas defined by the drawings and specifications.
- B. Prevention of Landscape Defacement: Do not use trees that are to remain for any purpose such as crane stays, guy anchors, etc. Do not place debris where damage to trees may result. Do not stockpile fill or other materials of construction around bases of trees to remain.
 - 1. Remove any roots and branches that would interfere with normal construction operations, or that need to be removed to balance the trees, without injury to trunks and as approved by Landscape Architect. Do any additional cutting or trimming only as necessary and in accordance with the accepted standards of the International Shade Tree Conference.
- C. Restoration of Landscape Damage: Restore any landscape feature scarred or damaged by equipment or operations as nearly as possible to original condition as approved. Repair any damaged trees or shrub using a certified arborist approved by Landscape Architect. In the event that repair is not feasible, replace tree or shrub with tree or shrub matching size of existing damaged item. In the event the replacement is not feasible, the Contract sum shall be reduced by the value of the damage. The value of any tree or shrub shall be based on the latest Standards approved by the International Society of Arboriculture.
- D. Post Construction Clean Up or Obliteration: Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction caused by work under this Contract.

3.02 DUST CONTROL

- A. Maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas and all other work areas within or without the project boundaries free from dust which would cause the standards for air pollution to be exceeded or cause a hazard or nuisance to others. Approved temporary methods of stabilization consisting of sprinklered water or similar methods will be permitted to control dust. Do not use oil or similar penetrants. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Perform dust control as the work proceeds and whenever a dust nuisance or hazard occurs.

3.03 NOISE CONTROL

- A. Use every effort and every means possible to minimize noises caused by the operations required for this work that the Owner may consider objectionable. Provide working machinery and equipment designed to operate with least possible noise, and when gearing is used, use such gearing of a type designed to reduce noise to a minimum. Use compressors equipped with silencers on intake lines. Use gas or oil operated equipment equipped with silencers or mufflers on intake and exhaust lines. Wherever practicable, use electricity for power to reduce noise. If required, use dumping bins, hoppers and trucks used for disposal of excavated and other materials lined with wood or other sound deadening material. Where required by agencies having jurisdiction, certain noise producing work may have to be performed during specified periods only.

3.04 PROTECTION AND RESTORATION OF PROPERTY

- A. Preserve and protect from injury all property either public or private along and adjacent to the work and be responsible for and repair any and all damage and injury thereto arising out of or in consequence of any act or omission, neglect or misconduct in the execution of the work, or in consequence of the nonexecution thereof by the Contractor or his employees or subcontractors in the performance of the work covered by the Contract prior to completion and acceptance thereof. The Contractor will be solely responsible for any trespass upon adjacent property or injury thereto, resulting from or in connection with his operations. The Contractor will be liable for any claims that may be made on account of the deposit of debris of any kind upon private property. Exercise special care during operations to avoid injury to underground structures and utilities.
- B. Provide written notice to all public service corporations or officials owning or having charge of public or private utilities of intention to commence operations affecting such utilities at least 48 hours, exclusive of Saturdays, Sundays and legal holidays, in advance of the start of such operations in accordance with applicable Federal, State or local laws and regulations.
- C. Although the drawings may indicate the approximate location of existing subsurface utilities in the vicinity of the work, the accuracy and completeness of the information is not guaranteed by the Landscape Architect. Before commencing any work or operations that may endanger or damage any subsurface structures, carefully locate all such structures and carefully conduct operations in such a manner so as to avoid damage thereto. When necessary, cooperate with representatives of public and private service companies in order to avoid damage to their structures by furnishing and erecting suitable supports, props, shoring or other means of protection. Do not interrupt live services until new services have been provided. Plug or otherwise make secure all abandoned services.
- D. If the Contractor wishes to have any utilities temporarily relocated for his convenience, he shall make the necessary arrangements with the appropriate utility company and pay for all associated costs at no additional expense to the Owner.
- E. Insure that fire hydrants adjacent to the work are readily accessible to fire apparatus at all times. Do not place materials or other obstruction within a radius of ten (10) feet of a fire hydrant or fire alarm box. Where materials are unavoidably piled or placed temporarily in the vicinity of a fire hydrant or fire alarm box and to such height as to prevent the same from being readily seen, indicate the position of such hydrant or alarm box by suitable signs and lights, both day and night. Keep mail boxes, street shut off valves on gas and water lines, standpipe connections and manholes readily accessible at all times.

- F. Protect existing structures. Provide lights and fences and take all other precautions that may be necessary to protect life and property. Carry on all operations and use equipment of such types that all noise resulting from such operations will be kept to a minimum. Construct barriers and bridges for the protection and use of the public and for the protection of the work as may be necessary. Provide and maintain access for occupant entrance to and exit from all adjacent building and property at all times. Make all temporary facilities required for the general protection of the public and the work substantial in character and neat in appearance. Such temporary facilities are subject to approval by Owner.
- G. Carefully protect land monuments and property marks. If necessary, remove the same only at Landscape Architect's direction and after an authorized agent has witnessed or otherwise referenced their location.

3.05 SITE CLEANING

- A. Maintain the site in a neat and orderly condition throughout the execution of this work. Keep the site free from accumulation of waste materials or rubbish caused by construction operations at all times. Clear the site of construction rubbish at least once a day. Maintain stored materials in an orderly manner.

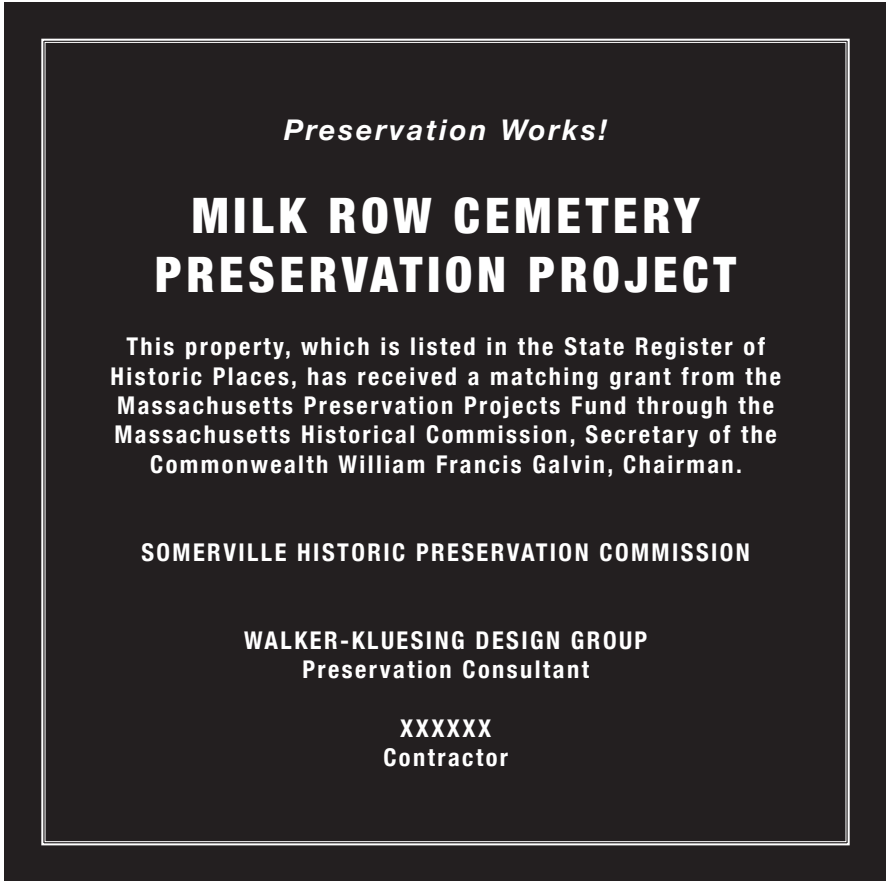
3.06 FALL OUT CONTROLS

- A. Maintain controls so that dust or air borne debris does not contaminate adjacent property.
- B. Vehicles coming to and leaving the site shall have clean tires so as not to contaminate streets with mud or debris.
- C. Trucks carrying excavated material shall be covered.

3.07 PESTS

- A. Remove from job daily debris that might contribute to survival or spread of rodents, roaches and other household pests.
- B. Should pests inhabit premises, employ the services of an acceptable pest exterminator to keep the project site free of pests at all times.

END OF SECTION



PROJECT SIGN [4'x4']

WKDG	WALKER-KLUESING DESIGN LANDSCAPE ARCHITECTURE - SITE PLANNING - URBAN DESIGN 711 KETCH DRIVE, NAPLES FL 34103 USA (239) 248-8262			PROJECT: MILK ROW CEMETERY TOMB FACADE REHABILITATION SOMERVILLE, MASSACHUSETTS	DRAWING NUMBER: SK-1
	SCALE: 1-1/2" = 1'-0"	DATE: 10 FEBRUARY 2016	BY: VW		

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Products.
- B. Transportation and Handling.
- C. Substitutions and Product Options.

1.02 RELATED REQUIREMENTS

- A. Section 01 11 00- Summary of Work.
- B. Section 01 33 00- Submittals.
- C. Section 01 70 00- Contract Closeout.

1.03 PRODUCTS

- A. Products include material, equipment and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification Section shall be the same, and shall be interchangeable.
- D. Do not use materials and equipment removed from the site except as specifically required or allowed by Contract Documents.

1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with work and conditions at site:
 - 1. Work of other contractors, or City.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.
 - 4. City's use of premises.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts and to facilitate assembly.
- E. Immediately on delivery, inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Containers and packages are intact, labels are legible.
 - 4. Products are properly protected and undamaged.

- F. Provide equipment and personnel necessary to handle products, including those provided by City, by methods to prevent soiling or damage to products or packaging.
- G. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.

1.05 STORAGE

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather tight enclosures and maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well drained area. Prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.06 PROTECTION AFTER INSTALLATION

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of Work.
- B. Control traffic to prevent damage to equipment and surfaces.
- C. Provide coverings to protect finished surfaces from damage.
- D. Lawns and Planted areas: Prohibit traffic of any kind across planted lawn and other planted areas.

1.07 PRODUCT OPTIONS

- A. Within thirty days after date of Contract, submit complete list of major products proposed, with name of manufacturer, trade name and model number.
- B. Options:
 - 1. Products specified by reference standards or by description only: Any product meeting those standards.
 - 2. Products specified by naming one or more manufacturers and followed by "or equal": Submit request for substitution for any manufacturer not specifically named.
 - 3. Products specified by naming several manufacturers: Product of one of the named manufacturers - No options or substitutions allowed.

1.08 SUBSTITUTIONS

- A. Only within thirty days after date of Contract will Landscape Architect consider requests from Contractor for substitutions where allowed by Contract Documents. Subsequently, substitutions will be considered only when a product becomes unavailable due to no fault of the Contractor.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 - 2. Will provide the same warranty for substitution as for specified product.
 - 3. Will coordinate installation and make other changes that may be required for work to be complete in all respects.
 - 4. Waives claims for additional costs that may subsequently become apparent.
- D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- E. Landscape Architect will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 70 00 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Requirements of this Section are in addition to those indicated in the printed form of the Contract.
- B. Closeout procedures.
- C. Final cleaning including removal of waste materials and rubbish from and about the project site as well as tools, construction equipment, machinery, tree protection fencing, filter barrier, turbidity curtain and surplus materials at completion of work.
- D. Operation and maintenance data.
- E. Systems demonstration.
- F. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract: Fiscal provisions, legal submittals and other administrative requirements.
- B. Section 01 11 00- Summary and Scheduling of Work.
- C. Section 01 50 00- Construction Facilities and Temporary Controls.

1.03 CLOSEOUT PROCEDURES

- A. Substantial Completion:
 - 1. When Contractor considers work or designated portion of Work is substantially complete, submit written notice with list of items to be completed or corrected.
 - 2. Should Landscape Architect inspection find Work is not substantially complete, the Landscape Architect will promptly notify Contractor in writing, listing observed deficiencies.
 - 3. Contractor shall remedy deficiencies and send a second written notice of substantial completion.
 - 4. When Landscape Architect finds work is substantially complete he will prepare a certificate of Substantial Completion in accordance with provisions of General Conditions.
- B. Final Completion:
 - 1. When Contractor considers Work is complete, submit written certification:
 - a. Contract Documents have been reviewed.
 - b. Work has been inspected for compliance with Contract Documents.
 - c. Work has been completed in accordance with Contract Documents, and deficiencies listed with the Certificate of Substantial Completion have been corrected.

- d. Equipment and systems have been tested, adjusted and balanced, and are fully operational.
 - e. Operation of systems has been demonstrated to Owner's personnel.
 - f. Work is complete and ready for final inspection.
 2. Should Landscape Architect's inspection find Work incomplete, the Landscape Architect will promptly notify Contractor in writing listing observed deficiencies.
 3. Contractor shall remedy deficiencies and send a second certification of final completion.
 4. When Landscape Architect finds Work is complete, the Landscape Architect will consider closeout submittals.
- C. Reinspection Fees: Should status of completion of Work require reinspection by Landscape Architect due to failure of Work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of Landscape Architect compensation for reinspection services from final payment to Contractor.
- D. Closeout Submittals:
 1. Evidence of compliance with requirements of governing authorities:
 - a. Certificate of Occupancy.
 - b. Certificates of inspection required for mechanical and electrical systems.
 2. Project Record Documents: In accordance with Section 01720.
 3. Operation and Maintenance Data: In accordance with Section 01700.
 4. Warranties and Bonds: In accordance with Section 01700.
 5. Spare Parts and Maintenance Materials: In accordance with Section 01700.
 6. Keys and Keying Schedule.
 7. Evidence of Payment and Release of Leins: In accordance with the Conditions of the Contract.
 8. Consent of Surety to Final Payment.
 9. Certificates of Insurance for Products and Completed Operations: In accordance with the printed form of the Contract.
- E. Submit final statement reflecting adjustments to Contract Sum indicating:
 1. Original Contract Sum.
 2. Previous Change Orders.
 3. Changes under allowances.
 4. Changes under unit prices.
 5. Deductions for uncorrected work.
 6. Deductions for liquidated damages.
 7. Deductions for reinspection fees.
 8. Other adjustments to Contract Sum.
 9. Total Contract Sum as adjusted.
 10. Previous payments.
 11. Sum remaining due.
- F. Landscape Architect will issue a final Change Order reflecting approved adjustments to Contract sum not previously made by change orders.
- G. Submit application for final payment in accordance with provisions of Conditions of the Contract.

1.04 OPERATION AND MAINTENANCE DATA

- A. Provide data for: Mechanical and electrical equipment and controls
- B. Submit two sets of operation and maintenance data prior to final inspection, bound in 8-1/2 by 11 inch three ring side binders with durable plastic covers.
- C. Provide a separate volume for each system, with a table of contents and index tabs for each volume. Include the following:
 - 1. Part 1: Directory listing names, addresses and telephone numbers of: Landscape Architect and Contractor.
 - 2. Part 2: Operation and maintenance instructions, arranged by system. For each system, give names, addresses and telephone numbers of subcontractors and suppliers. Include the following information:
 - a. Appropriate design criteria.
 - b. List of equipment.
 - c. Parts list.
 - d. Operating instructions.
 - e. Maintenance instructions, equipment.
 - f. Maintenance instructions, finishes.
 - g. Shop drawings and product data.
 - h. Warranties.

1.05 SYSTEMS DEMONSTRATION

- A. Prior to final inspection, demonstrate operation of each system to Landscape Architect and Owner.
- B. Instruct Owner's personnel in operation, adjustment and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

1.06 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within ten days after first operation. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts and maintenance materials in quantities specified in each Section, in addition to that required for completion of Work. Coordinate with Owner, deliver to Project site and obtain receipt prior to final payment.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS

- A. Comply with manufacturer's instructions of material cleaned. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Cleaning Methods: Cleaning shall result in a uniform appearing finish surface clean of foreign matter and undamaged as to its factory or job finished color, sheen, texture and general appearance. Where cleaning operations begin or stop shall not be evident in finished work. Do not damage or mar adjacent work with cleaning materials or procedures.
- C. Clean exterior surfaces exposed to view. Remove temporary labels, stains and foreign substances. Clean equipment and fixtures to a sanitary condition. Clean or replace filters of mechanical equipment. Clean finish surfaces of gratings and other site appurtenances of dirt, stains and foreign matter.
- D. Clean site of debris. Wash walks, steps, curbs, drives and paved areas free of mud and other foreign substances. Clean gravel areas and spread gravel to a uniform surface. Rake clean other surfaces.
- E. Clean out catch basins of debris and check all storm drain lines to see that there is free flow of water.

END OF SECTION

SECTION 01 78 00 – CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Requirements of this Section are in addition to those indicated in the printed form of the Contract.
- B. Maintenance and submittal of Record Documents and Samples.
- C. Preparation and submittal of "Record Drawings" upon completion of the Work.

1.02 RELATED REQUIREMENTS

- A. The printed form of the Contract.
- B. Section 01 33 00- Submittals: Shop drawings, product data and samples.
- C. Section 01 70 00- Contract Closeout: Closeout procedures, submittals required at final completion.
- D. Individual Specification Sections: Manufacturer's certificates and certificates of inspection.

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain at the site for Owner one record copy of:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data and samples.
 - 6. Field test records.
 - 7. Inspection certificates.
 - 8. Manufacturer's certificates.
- B. Store record documents and samples in field office apart from documents used for construction. Provide files, racks and secure storage for record documents and samples.
- C. Label and file project record documents and samples in accordance with section number listings in Table of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large printed letters.
- D. Maintain record documents in a clean, dry and legible condition. Do not use record documents for construction purposes.
- E. Keep record documents and samples available for inspection by City.
- F. Other documents: Maintain manufacturer's certifications, inspection certifications and field test records required by individual specification sections.

1.04 RECORDING

- A. Record information on a set of black line opaque drawings, and in a copy of the Project Manual.
- B. Provide felt tip marking pens for recording information, maintaining separate colors for each major system.
- C. Record information concurrently with construction progress. Do not conceal any Work until required information is recorded.
- D. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction, including:
 - 1. Measured depths of elements of foundation in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.
 - 4. Field changes of dimension and detail.
 - 5. Changes made by modifications.
 - 6. Details not on original Contract Drawings.
 - 7. References to related shop drawings and modifications.
- E. These marked up and colored in prints will be used as a guide for determining the progress of the Work installed. They will be subject to inspection by the Landscape Architect and they shall be corrected immediately if found either inaccurate or incomplete.
- F. Specifications: Legibly mark each item to record actual construction, including:
 - 1. Manufacturer, trade name and catalog number of each product actually installed, particularly optional items and substitute items.
 - 2. Changes made by Addenda and Modifications.
- G. These recording procedures are mandatory. Landscape Architect will not approve any requisition for payment until Landscape Architect is satisfied that these recording procedures are being complied with and are up to date.

1.05 RECORD DRAWINGS

- A. Prepare and submit "Record Drawings" prior to release of final payment, in accordance with Section 01700.
- B. Upon completion of the Work, submit to Landscape Architect for review, the marked up record blackline prints which were kept at the Project site and labeled as "PROJECT RECORD".
- C. The "Project Record" prints will be returned to the Contractor with comments and recommendations. The Contractor will be furnished, at cost, one complete set of wash-off mylar transparencies of the original Contract Drawings.
- D. Employ a skilled draughtsman to revise the mylar transparencies to reflect the changes as recorded on the "Project Record" prints. Label each mylar transparency in large, neat printed letters "RECORD DRAWING".

E. Upon completion of the "Record Drawings", submit to City, the following:

1. The marked up "Project Record" prints.
2. The mylar "Record Drawings" dated and signed by the Contractor.
3. Seven complete sets of blackline prints of the "Record Drawings".

1.06 SUBMITTALS

A. At Contract Closeout, deliver Record Documents and Samples as specified in General Conditions.

B. Transmit with cover letter in duplicate, listing:

1. Date.
2. Project title and project number.
3. Contractor's name, address and telephone number.
4. Number and title of each Record Document.
5. Signature of Contractor or authorized representative.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 04 03 43 – CONSERVATION TREATMENT FOR PERIOD STONE

PART 1 - GENERAL

1.01 SUMMARY AND DESCRIPTION OF WORK

- A. The work of this section consists of the provision of all plant, materials, scaffolding, labor and equipment and the like necessary and/or required for the complete execution of all stone conservation treatments as required by the specifications on the marble tomb plaques located in Milk Row Cemetery. Provide water and power as required to complete the work in this section.
- B. Scope of Conservation Services: Conservation, documentation and treatments shall include but not necessarily be limited to the following steps:
 - 1. Pre-treatment, During Treatment and After Treatment photo-documentation with digital photographs for each phase of treatment. Comply with Massachusetts Historical Commission's Technical Requirements for Digital Images.
 - 2. Cleaning of marble to remove general soiling, biological growths and any localized staining.
 - 3. Treatment of loose and friable areas with acrylic resin B-72 and tissue paper in order to complete other treatments without losing material.
 - 4. Non-structural reattachments of loose or detached fragments of stone.
 - 5. Grouting of all fissures, seams and openings with specified materials.
 - 6. Patching of areas of loss with specified materials in areas indicated on contract drawings.
 - 7. Final treatment documentation.

1.02 SUBMITTALS

- A. Resumes and Qualifications: Contractor shall submit resumes and qualifications for each or the following individuals:
 - 1. Conservator (s): Resume and a list of prior projects for lead conservator and any assisting conservators on the project. Submittal shall include at least five examples of projects similar in scope and importance to the work on the tombs. Project references shall include name and date of execution of each project as well as the names and telephone numbers of references for each of the five projects.
 - 2. Conservation Technicians and craftsmen: Resumes and a list of prior projects for each individual who will be executing treatments.
- B. Product Data: Manufacturer's technical data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with requirements. Submit material safety data sheets.
- C. Description: Written program for each phase of conservation including schedule and phasing. Include items for coordination with other trades and indication of how surrounding materials will be protected. Describe materials and equipment to be used.
- D. Alternate Methods: If after the contract is awarded, alternate methods and materials to those indicated are proposed for any phase of the stone conservation work, the contractor shall provide a written description, including evidence of successful use on other comparable projects along with standard submittals outlined above. Written approval from the Landscape Architect is required prior to substituting any materials or methods.
- E. Samples:
 - 1. Two of lime grout fills for approval. Samples to be evaluated for color, texture, tooling.
 - 2. One area of cleaned stone for each of the following types of conditions or materials: encrustations marble; light soiling on marble; biological growths on marble. Each sample

area will entail the full compliment of specified cleaning treatments required to clean each of the conditions noted above.

3. Composite mortar. Sample to evaluated for color and texture.

1.03 QUALITY ASSURANCE

- A. Stone Conservation Contractor- Hereafter Referred to as “the Contractor”: Work shall be performed by firm(s) employing masons and conservators that have no less than five years of experience comparable stone conservation projects. The Contractor shall submit references for five successfully completed projects of similar scope.
- B. Conservation Technicians and Craftspeople: Stone conservation contractor shall employ technicians and craftspeople with extensive prior experience treating marble.
- C. All work shall comply with the AIC Code of Ethics and Guidelines for Practice.

1.04 JOB CONDITIONS

- A. Take whatever precautions are necessary to protect the monument from damage resulting from work under this section.
- B. Prevent mortar and patching compounds used in repair work from staining stone. Prevent damage to adjacent surfaces and surrounding vegetation from materials or chemicals used on the project.
- C. Work shall not be permitted in freezing weather unless the work area has been enclosed and heated to maintain a constant temperature and humidity.
- D. Use materials only at the manufacturer’s recommended and temperature and humidity tolerances. In case of conflict between standards on the project, the more stringent shall apply.

1.05 TERMS AND DEFINITIONS

- A. Treatment with acrylic resin B-72 and Tissues Paper: The goal of this step is to secure all loose, semi-detached or friable areas against further loss during moving, handling, cleaning or other conservation treatments.
- B. Cleaning: The goal of cleaning is to remove surface soiling, biological growth, biological stains, gypsum crusts and other foreign materials from the surface of the stone without damaging the stone substrate. Care must be taken not to overclean or abrade the stone. All cleaning methods and materials must be approved in writing by the Landscape Architect prior to testing or use on the monument. Under no conditions will abrasive cleaning, cleaning with caustic chemicals or cleaning with materials and methods not specified, and/or approved in writing, be permitted.
- C. Grouting: The goal of grouting is to introduce compatible materials into narrow cracks and fissures in order to prevent or slow down the ingress of water into the cracks. Grouts must be compatible with the stone in composition and appearance.
- D. Lime Fills: The goal of lime fills is to fill voids on the surface of the stone in a manner that blends with the appearance of the adjacent stone.

- E. Pinning: The goal of pinning is to secure one stone to another. All pins shall be of the specified materials. All adhesives/grouts shall be used in the specified manner. Pin locations, pin diameters and lengths along with hole sizes and drilling methods must be approved in writing prior to undertaking any work.
- F. Patching/Composite Mortar Repairs: Areas of loss too large to receive a high calcium lime fill will be repaired with the specified patching material. Patching material to match the existing Marble as closely as possible in terms of color, texture and physical properties such as hardness, permeability and water vapor transmission.

PART TWO - PRODUCTS

- 2.01 MATERIALS GENERAL: Comply with referenced standards and other requirements indicated applicable to each type of material required.
- 2.02 LIME GROUTS FOR FILLING CRACKS WITH AN AVERAGE WIDTH $\pm 1/8''$
 - A. Materials: High Calcium Lime (Fat Lime) US Heritage or approved equal.

Mix Proportions for Lime Grout

1 part aged high calcium lime putty (fat lime).
2 parts fine white sand.
Up to $\frac{1}{2}$ part marble dust or marble sand.
 - B. Dispersed hydrated lime grout manufactured by US Heritage Group, usheritage.com, or Voidspan Technologies, voidspan.com or approved equal.
- 2.03 FOR CRACKS WITH AN AVERAGE WIDTH GREATER THAN $1/8''$
 - A. St Astier Naturally Hydraulic Lime available from LimeWorks.us 145 State Road, Telford, PA 18969 (p) 215-536-6706 (f) 215-536-2281 or approved equal.
 - 1. 1 part St. Astier Naturally Hydraulic Lime (NHL 2) and 3 parts combination of fine sand and stone dust plus approved inorganic pigments as required to match substrate.
- 2.04 COMPOSITE REPAIR MORTAR: St Astier Lithomix Naturally Hydraulic Lime Based Composite Repair Mortar available from LimeWorks.us 145 State Road, Telford, PA 18969 (p) 215-536-6706 (f) 215-536-2281 or approved equal.
- 2.05 STABILIZATION OF LOOSE OR FRIABLE AREAS: Acrylic Resin B-72 and Japanese tissue paper applied to the surface of the friable or loose stone. B-72 to be dissolved in solvent such as acetone. Percentage of solids to solvent to be field tested. Approximately 5% . For situations where a water soluble adhesive is appropriate: Methyl Cellulose or Polyvinyl Alcohol can be used to lay down the tissue paper or cloth
- 2.06 STONE ADHESIVES FOR NON-STRUCTURAL REPAIR: Acrylic Resin B-72 dissolved in solvent such as acetone. Percentage of solids to solvent to be field tested. Approximately 10 to 25%.
- 2.07 CLEANING AGENTS
 - A. Water: All water shall be clean potable water. If potable water is not available at jobsite, filter all water with approved particulate filter.
 - B. Non-Ionic Detergents: Triton XL 80 or approved equal available from Talas, 568 Broadway, New York, NY 10012 (212) 219-0770.

- C. Concentrated Soap: Vulpex Soap available from Talas, 568 Broadway, New York, NY 10012 (212) 219-0770.
 - D. Synthetic Anionic Detergent: Orvus WA Paste available from Talas, 568 Broadway, New York, NY 10012 (212) 219-0770.
 - E. D2 Architectural Antimicrobial from D2.com.
- 2.08 ADHESIVE FOR STRUCTURAL REPAIRS: Flowable and Paste Epoxies for injections and structural repairs: Akemi Akepox 2000, 2010, 2030, 5000, 5010 from Akemi North America (877) 462-5364 available from Stone Boss Industries, 26-04 Borough Place, Woodside, NY 11377 (718) 278-2677 Fax (718) 267-1997.
- 2.09 PINS FOR STRUCTURAL PINNING: Stainless Steel threaded rod grade 304 or better. Pin length and diameter to be determined in the field.

PART 3 - EXECUTION

- 3.01 CONDITIONS ASSESSMENT: Submit to the Landscape Architect for review a through conditions assessment and treatment plan. No work may commence until conditions assessment and treatment plan have been reviewed and approved by the Landscape Architect. Conditions assessment shall consist of written description, annotated drawings, photographs.
- 3.02 TREATMENT PLAN: Submit to the Landscape Architect for review a detailed treatment proposal. No work may commence until treatment plan has been reviewed and approved by Landscape Architect. Treatment plan to include detailed descriptions of materials and methods to be used in each treatment as well as manufacturer's data on each product. Material Safety Data Sheets for each product to be submitted separately to Landscape Architect.
- 3.03 PHOTO-DOCUMENTATION
- A. Comply with Massachusetts Historical Commission's Technical Requirements for Digital Images. Photographs to include a minimum of six views of each sculpture.
 - 1. Pre-treatment
 - 2. During treatment
 - 3. After Treatment
- 3.04 B-72 AND TISSUE PAPER TREATMENT
- A. The goal of pre consolidation shall be to secure all loose, semi-detached or friable areas against loss during other conservation treatments. Contractor will be held responsible for losses on the stone that take place during conservation treatments therefore the extent of pre-consolidation shall be that which is in the contractor's judgement sufficient to secure against losses. Submittal shall be for materials and methodology not extent of pre-consolidation.
 - B. Acrylic Resin B-72 dissolved in a solvent such as acetone approximately 5% solids shall be applied with a brush to areas requiring pre-consolidation. Japanese tissue paper shall be applied to wetted areas. Additional solution of B-72 may be applied over tissue paper.
 - C. Following the completion of treatments in each area, the tissue paper impregnated with B-72 shall be removed using acetone to dissolve the bond between the stone and the paper.
- 3.05 CLEANING
- A. The goal of the stone cleaning is to produce a surface that is free of foreign matter without damaging the surface of the stone. If complete removal of all crusts and shadows of crusts

proves to be detrimental to the stone substrate, then cleaning will include only partial removal of surface accretions. Cleaning is to include all, or some of, the procedures laid out below. Some surface consolidation with one or both of the treatments included in the section on chemical consolidation may be required prior to cleaning.

- B. Mechanical Removal of Moss from Joints: Scrap Moss from joints using wood or plastic scrapers. Remove soil trapped in joints.
- C. Water lance: Removal of surface dirt and initial cleaning of the surfaces will be with a water lance with a fan tip of 15 degrees or greater. Water is to be at ambient temperature. Use minimum water pressure determined through field testing. The rate of delivery shall not be more than 10 gallons per minute and the lance should maintain a distance of at least 10 inches from the surface of the stone at all times. To remove dissolved and particulate iron, water should be filtered through a Culligen HB-90 time clock conditioning system. Water filters must be changed in accordance with manufacturer's recommendations.
- D. Detergent Wash: Wet surface with filtered water and then apply a 2% solution of Orvus Non-ionic detergent in filtered water. Gently scrub surface with natural bristle brushes, nylon brushes and natural sponges. Rinse surface with filtered water from water lance as described above. Repeat process as required using Orvus or repeat utilizing Triton XL80 or Vulpex. Dilution and dwell time to be determined during mock ups/field testing.
- E. D/2 Antimicrobial: Apply D/2 brush. Agitate surface. After two minutes reapply D/2, Lightly mist with clean water and continue agitating surface. Rinse with water lance as described above.

3.08 READHESION OF STONE (NON STRUCTURAL)

- A. Small piece of stone that are loose or semi-detached may be reattached with Acrylic Resin B-72 dissolved in a solvent such as acetone. Approximately 10% solids. Area of stone to receive reattachment and piece to be reattached shall be thoroughly cleaned with solvent and then coated with adhesive. Secure fragment until adhesive is set. Clean surface of stone so that no adhesive residue remains on surface. Areas that are to be readhered with B-72 shall be clearly identified in the conservator's treatment report.

3.09 LIME GROUT

- A. The goal of lime based fills and grout is to prevent against further water penetration into fissures, or small areas of loss, and to create a water shedding surface.
- B. Wet area thoroughly and apply slurry of lime putty without sand to the area that is to be grouted or filled. Apply lime grout in small lifts allowing each lift to semi-set prior to applying next lift. Keep surfaces damp to avoid evaporation prior to wet set of grout.

3.10 COMPOSITE MORTAR FILLS

- A. The goal of patching with composite mortar repairs is to disguise large areas of loss and to create effective water-shedding surfaces. Most patching requires good mechanical keying to achieve a long lasting bond. Because of the delicate nature of the stone to be patched, mechanical keying shall be kept at a minimum.
- B. Clean areas to be filled as outlined above to remove dirt, grime, biological growth or any other foreign materials that may deter bonding between composite mortar and stone.
- C. Protect adjacent areas from staining. Pre-wet substrate as required to achieve a proper bond between fill materials and stone. Apply fill materials in lifts. Cure as required to prevent cracking or debonding.

END OF SECTION

3.05 FLASHING OF MASONRY WORK

- A. Provide concealed flashing in masonry work at, or above all shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall so as to divert such water to the exterior. Prepare masonry surfaces smooth and free from projections that could puncture flashing. Place through wall flashing on bed of mortar and cover with mortar. Seal penetrations in flashing with mastic before covering with mortar.
 - 1. Extend flashings the full length of lintels and shelf angles a minimum of 4 inches, and through the inner wythe to within 1/2 inch of the interior face of the wall in exposed work. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2 inches.

3.06 REPAIR AND POINTING

- A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge any voids or holes, except weepholes, and completely fill with mortar. Point-up all joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of sealant compounds.

3.07 CLEANING

- A. Promptly as work proceeds and upon completion, remove excess mortar, smears, droppings.
- B. Clean adjacent and adjoining surface of marks arising out of execution of work of this Section.
- C. Sweep up and remove daily sand, cleaning compounds and mixtures, dirt, debris and rubbish.
- D. Clean soiled surfaces using a non-acidic solution that will not harm masonry or adjacent materials. Consult masonry manufacturer for acceptable cleaners. Use non-metallic tools in cleaning operation. Cleaning methods are subject to Landscape Architect's approval.

END OF SECTION

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Provide all labor and materials required for the furnishing, setting in place and completion of all unit masonry work shown or called for in the Contract Documents as follows:
 - 1. Face brick in unit masonry walls.
 - 2. Resetting precast concrete cap and marble plaques.
 - 3. Cleaning and repointing granite edging and brick infill.
 - 4. Removing lime residue from brick facade.
- B. Work includes, but is not limited to:
 - 1. All cutting of unit masonry to size and shape, including cutting of all holes, slots and recesses required for anchors of all types.
 - 2. Setting bed and joint filler.
 - 3. Building in all items furnished by other trades.
 - 4. Cut and fit for other sections of work.
 - 5. All other items of unit masonry work shown or reasonably inferred to make the work of this Section complete.
- C. Coordinate all work with related trades.

1.02 RELATED SECTIONS

- A. Section 04 03 43 – Conservation Treatment for Period Stone.
- B. Section 05 03 00 – Conservation Treatment for Period Metals.
- C. Section 09 91 13 – Exterior Painting.
- D. Section 03 10 00 – Site Clearing.
- E. Section 31 20 00 – Earth Moving.
- F. Section 32 12 00 - Flexible Paving.
- G. Section 32 92 19 – Seeding.

1.03 SUBMITTALS

- A. Manufacturer's specifications and data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements. Include instructions for handling, storage, installations and protection.
- B. Samples:
 - 1. Face brick samples showing full range of colors and textures available in products complying with specified requirements. Furnish samples made up of actual bricks or sections of brick. Following preliminary selection of colors and textures for each color and texture under consideration. Include in each set the maximum variation to be expected in finished work.
 - 2. Colored masonry mortar samples showing full range of colors available.
 - 3. Anchors: Each type.

1.04 QUALITY ASSURANCE

- A. Restoration Specialist: The firm shall have not less than 5 years successful experience in comparable masonry restoration projects and employ personnel skilled in the processes and operations indicated and required. Maintain the same skilled personnel on the project until work is completed.
- B. Single Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.
- C. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.
- D. Masonry Preconstruction Testing Service: Employ and pay for the services of a testing laboratory acceptable to Owner and experienced in performing types of preconstruction masonry tests indicated.
 - 1. Engage a testing laboratory complying with ASTM E329.
- E. Preconstruction Tests by Unit Test Methods: Test the following materials by methods indicated:
 - 1. Brick: Test each type and grade of brick per ASTM C67. If coefficient of variation of compression samples tested exceeds 12 percent, obtain compressive strengths by $(1-1.5) \times (0.01 \times \text{coefficient of variation}) - 0.12$.
 - 2. Mortar Tests: Test each mortar type per ASTM C780.
- F. Field Constructed Mock-Ups: Prior to installation of masonry work, erect sample wall panels to further verify selections made for color and textural characteristics under sample submittals of masonry units and mortar, and to represent completed masonry work for qualities of appearance, materials and construction: build-mock-ups to comply with the following requirements:
 - 1. Locate mock-ups on site in locations indicated or, if not indicated, as directed by the Landscape Architect.
 - 2. Build mock-ups for the following types of masonry in sizes of approximately 4 feet long by 2 feet high by full thickness, including face and back-up wythes as well as accessories.
 - 3. Protect mock-ups from the elements with weather resistant membrane.
 - 4. Retain mock-ups during construction as standard for judging completed masonry work. When directed, demolish mock-ups and remove from site.
- G. Construction Tolerances:
 - 1. Variations from Plumb: For vertical lines and surfaces of columns, walls and arrises, do not exceed 1/4 inch in 10 feet, nor 1/2 inch in 40 feet or more. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4 inch in any story or 20 feet maximum, nor 1/2 inch in 40 feet or more.
 - 2. Variation from Level: For lines of exposed parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4 inch in any bay or 20 feet maximum, nor 3/4 inch in 40 feet or more.
 - 3. Variation of linear Building Line: For positions shown in plan and related portion of columns, walls and partitions, do not exceed minus 1/2 inch in any bay or 20 feet maximum, nor 3/4 inch in 40 feet or more.
 - 4. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4 inch nor plus 1/2 inch.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry materials to project in undamaged condition.
- B. Store and handle masonry units to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes. Protect masonry units during storage and construction against moisture, soiling, staining and physical damage.
 - 1. Handle stone to prevent chipping, breakage, soiling or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials. Lift with wide-belt type slings wherever possible. Do not use wire rope or ropes containing tar or other substances that might cause staining. If required use wood rollers and provide cushion at end of wood slides.
 - 2. Store stone on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skid and stones to distribute weight evenly and to prevent breakage or cracking of stones. Protect stored stone from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around stones.
- C. Store cementitious materials off the ground, under cover and in dry location.
- D. Store aggregates where grading and other required characteristics can be maintained.
- E. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

1.06 PROJECT CONDITIONS

- A. Protection of Work: During erection, cover top of walls with heavy waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
 - 2. Do not apply concentrated loads for at least 3 days after building masonry walls or columns.
 - 3. Staining: Prevent mortar from staining the face of masonry to be left exposed or painted. Remove immediately mortar in contact with such masonry.
 - 4. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
 - 5. Protect base of walls, sills, ledges and projections from droppings of mortar.
- B. Rack back unfinished work where possible. Tuck new work in with existing where necessary and when approved by Landscape Architect.

1.07 COLD WEATHER PROTECTION

- A. Precautions Against Freezing: All masonry shall be protected against freezing for not less than forty eight [48] hours after installation and not be constructed below forty [40] degrees F., or below forty five [45] degrees F. and falling, without temporary heated enclosures or without heating materials or other precautions necessary to prevent freezing. Minimum temperature within heated enclosure shall be forty [40] degrees F.
- B. Do not use masonry materials that are likely to contain frost. Do not use accelerating ingredients with any mortar. Mortar shall harden without freezing and with no damage from frost.
- C. Do not lay masonry units that are wet or frozen.
- D. Remove any ice or snow formed on masonry bed by carefully applying heat until top surface is dry to the touch. No frozen materials shall be used nor shall frozen masonry be built upon.

- E. Remove all masonry determined to be frozen or damaged by freezing conditions. Take down completed work found to be affected by frost and rebuild without charge to the contract price.
- F. For clay masonry units with initial rates of absorption (suction) that require them to be wetted before laying, comply with the following requirements:
 - 1. For units with surface temperatures above 32 degrees, wet with water heated to above 70 degrees.
 - 2. For units with surface temperatures below 32 degrees, wet with water heated to above 130 degrees F.

1.08 HOT WEATHER PROTECTION

- A. Use fresh mortar. Discard mortar that has stiffened due to hydration.

PART 2 - PRODUCTS

2.01 MASONRY UNITS

- A. Face brick: Existing stockpiled on site and that salvaged under Section 31 10 00 provided they are whole, sound, intact and clean. Remove all old mortar and clean units prior to reuse. Provide additional as required with brick of sizes, shape, color, finish and absorption characteristics to match existing brick.
- B. Precast concrete cap and marble plaques: Existing stockpiled on site and that salvaged under Section 31 10 00. Remove all old mortar and clean units prior to reuse. Clean marble in accordance with the requirements of Section 04 03 43.

2.02 ACCESSORIES FOR UNIT MASONRY

- A. Horizontal joint reinforcing shall be truss type, steel construction with 3/16 inch diameter side rods and 9 gage cross ties and of a width of approximately 2 inches less than thickness of wall. Joint reinforcing shall be fabricated in straight lengths of not less than 10 feet with matching pre-fabricated corner and intersection units. Joint reinforcing shall be fabricated from cold-drawn steel wire conforming to ASTM A82 and hot-dip galvanized after fabrication with 1.5 ounces zinc coating per square foot of wire surface in accordance with ASTM A153, Class B-2.
- B. Adjustable inserts shall be malleable iron of type and size indicated, or if not indicated, as required to support loading involved.
- C. Expansion anchors shall be type, size and load capacity shown, or if not shown, as required to support loading involved. For anchoring into concrete, fabricate from cadmium-plated or hot-dipped galvanized steel.
- D. Anchor bolts, nuts and washers: Fabricate from AISI Type 302/304 stainless steel if in contact with stone; otherwise, provide regular low carbon steel bolts and nuts (ASTM A307) hot-dip galvanized, complying with ASTM A153.
- E. Stone anchors: Type and size indicated or, if not indicated, as required to securely anchor and fasten stonework in place. Fabricate anchors and dowels from AISI Type 302/304 stainless steel.
- F. Setting buttons: Lead or plastic buttons of the thickness required for the joint size indicated, and of the size required to maintain uniform joint width.
- G. Concealed Fabric Flashing: Laminated copper fabric flashing consisting of 7 ounce copper sheet laminated between 2 sheets of bituminous saturated fabric equal to 7 ounce Wasco/York Copper Fabric by York Manufacturing, Inc. or 7 ounce Afco Copper fabric by Afco Products, Inc.

1. All flashing in mortar joints shall be deformed in such a way as to provide bond strength in mortar joints.

2.03 MORTAR MATERIALS

- A. Portland cement shall conform to ASTM C150, except complying with staining requirements of ASTM C91 for not more than 0.03 percent water soluble alkali. Furnish Type I and II, except Type III may be used for cold weather construction. Provide natural color or white cement as required to produce mortar color to match existing work in one or more areas.
- B. Aggregate for Mortar: Non-staining sand, ASTM C144, or ASTM C404, Size No. 2 except for joints 1/4 inch and less (if any) use aggregate graded with 100 percent passing No. 16 sieve.
 1. Provide well-graded bagged mason's mortar sand, ASTM C144 or other clean washed sand or crushed stone of size and color to match or blend visually with existing historic work as required.
- C. Lime: ASTM C207, special finishing hydrated lime, non-air-entrained.
- D. Colored Mortar Pigments; Natural and synthetic iron oxides and chromium oxides, compounded for used in mortar mixes. Use only pigments with record of satisfactory performance in masonry mortars. Do not use pigments that might adversely impact adhesion or strength of mortar. Landscape Architect will not be limited to "standard" colors. Provide custom colors when color selected is not available as one of the following products:
 1. "Spectrum Custom Colors": S.B. Green & Co., Inc., Watertown, MA.
 2. "SGS Mortar Colors": Solomon Grind-Chem Services, Inc.
 3. "True Tone Mortar Colors": Davis Colors, A Subsidiary of Rock Industries, Inc.
 4. Iron oxide pigments: Lander-Segal.
 5. Iron oxide pigments: Lansco.
- E. Moisture Resistant Mortar Additive: Ammonium Stearate, aluminum tri-stearate or calcium stearate.
- F. Calcium chloride, other antifreeze materials and accelerators: NOT PERMITTED.

2.04 WATER: Clean, potable, non-alkaline and free of deleterious materials that would impair strength or bond.

2.05 MORTAR MIX

- A. Mortar for Masonry: Comply with ASTM C270. Mortar proportions shall be as required to match existing mortar based upon masonry preconstruction testing specified herein. Where mortar is not required to match existing comply with ASTM C270, Proportions Specifications, except limit materials to those specified herein, and limit cement/lime ration (by volume) as follows:
 1. Provide minimum 750 psi Type N mortar at 28 days for non-load bearing walls with maximum 2 percent ammonia stearate or calcium stearate per cement volume. Mortar proportions by volume shall be one part Portland cement; one part hydrated lime; and 5 parts aggregate. (Mortar proportions by volume shall be one part Portland Cement; over 1/2 to 1-1/4 parts hydrated lime; and not less than 2-1/4 and not more than 3 times the sum of the volumes of cement and lime shall be aggregate.
- B. Measurement: Use methods that will ensure that specified proportions are controlled and accurately maintained. Measure aggregate materials in a damp, loose condition. The method of measuring materials shall be by volume. Use of a tile box or similar device is required. Measurement by shovel will not be allowed.

- C. Add mortar color to mix in accordance with manufacturer's recommendations and as required to match color of approved sample. Ensure uniformity of mix and coloration. Accurately measure and record the exact amount of pigment added to approved mix.
- D. Do not add plasticizers, accelerators, retardants, water repellent agents, air entraining additives and other admixtures to the mortar mix. Do not use anti-freeze compounds to lower the freezing point of mortar.
- E. Mixing: Machine mix mortar meeting the requirements of ASTM C270. Hand mixing will not be allowed. Mix mortar until it is thoroughly homogeneous, stiff and plastic. Use the minimum amount of water necessary to produce a workable mix. Mix mortar in small batches and use within one hour after preparation.
- F. Use mortar within two hours of mixing at temperatures over 74 degrees F., and two and one half hours at temperatures over 50 degrees F. but under 74 degrees F. Do not use mortar that has begun to set. The retempering of partially hardened mortar will not be permitted.

2.06 CLEANING AGENTS

- A. Non-Ionic Detergents: Triton XL 80 or approved equal available from Talas, New York, New York.
- B. Concentrated Soap: Vulpex Soap available from Talas, New York, New York.
- C. Synthetic Anionic Detergent: Orvus WA Paste available from Talas, New York, New York. D2 Architectural Antimicrobial from Cathedral Stone Products.
- D. For cleaning granite: EK Restoration Cleaner from Prosoco, Lawrence KS
- E. For cleaning lime residue on brick on tombs 7 and 8: Sure Klean 101 Lime Solvent by Prosoco, Lawrence KS.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

- A. Build masonry construction to the full thickness shown, except, build single wythe walls to the actual thickness of the masonry units, using units of nominal thickness shown or specified.
- B. Build chases and recesses as shown and as required for the work of other trades. Provide not less than 8 inches of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.
- C. Cut masonry units with motor-driven saw designed to cut masonry with clean sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible.
- D. Wet brick made from clay or shale that have ASTM C67 initial rates of absorption (suction) of more than 30 grams per 30 square inches per minute. Use wetting methods that ensure each clay masonry unit being nearly saturated but surface dry when laid.
- E. Lay exposed masonry in the bond pattern to match existing pattern and coursing. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners unless otherwise shown.

1. Reuse existing salvaged brick in exposed locations to the extent possible.
 2. Match coursing, bonding, color and texture of new masonry work with existing work, where directed.
- F. Layout walls in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half size units at corners, jambs and wherever possible at other locations.
- G. Lay up walls plumb and with courses level, accurately spaced and coordinated with other work.
- H. Stopping and Resuming Work: Rack back 1/2 masonry unit length in each course; do not tooth. Clean exposed surfaces of set masonry and remove loose masonry units and mortar prior to laying fresh masonry.
- I. Build in items specified under this and other Sections of these specifications as the work progresses. Fill in solidly with masonry around built-in items.
- J. Intersecting Load Bearing Walls: If carried up separately, block vertical joint with 8 inches maximum offsets and provide rigid steel anchors spaced not more than 4 feet on centers vertically, or omit blocking and provide rigid steel anchors at not more than 2 feet on centers vertically. Form anchors of galvanized steel not less than 1-1/2 inches by 1/4 inches by 2 feet long with ends turned up not less than 2 inches or with cross-pins. If used with hollow masonry units, embed ends in mortar filled cores.
- K. Temporary Formwork:
1. Provide formwork and shores as required for temporary support of reinforced masonry elements. Design, erect, support, brace and maintain formwork.
 2. Construct formwork to conform to shape, line and dimensions, shown. Make sufficiently tight to prevent leakage of mortar or concrete (if any). Brace, tie and support as required to maintain portion and shape during construction and curing of reinforced masonry.
 3. Do not remove forms and shores until reinforced masonry member has hardened sufficiently to carry its own weight and all other reasonable temporary loads that may be placed on it during construction.
- L. Cleaning salvaged stone and precast concrete: Remove old mortar and caulk before resetting. Remove old caulk with 1/4" hand chisel. Use extreme care to avoid causing any loss of parent material. Do not enlarge joint faces. Clean marble in accordance with the requirements of Section 04 03 43. Clean salvaged stone and precast concrete before setting by thoroughly scrubbing with fiber brushes followed by a thorough drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh fillers or abrasives. If not thoroughly wet at time of setting, drench or sponge stone. Do not wet expansion or control joint surfaces.
- M. Before commencing work, thoroughly clean surfaces to be covered with stone of all dust, dirt and foreign matter. Saturate concrete base with clean water several hours before placing setting bed. Remove surface water about 1 hour before placing setting bed.
- N. Set salvaged stone and precast concrete in accordance with drawings. Provide anchors, supports, fasteners and other attachments shown or necessary to secure work in place. Shim and adjust accessories for proper setting. Completely fill holes, slots and other sinkages for anchors, dowels, fasteners and supports with mortar during setting.

3.02 MORTAR BEDDING AND JOINTING

- A. Lay masonry units with completely filled bed, head and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.

- B. Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not otherwise indicated, lay walls with joint widths to match existing. Cut joints flush for masonry walls that are to be concealed or to be covered by other materials. Tool exposed joints to match existing or as directed.
- C. Remove masonry units disturbed after laying. Clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.
- D. Unless otherwise shown, each piece shall be carefully bedded in a full bed of mortar and tapped home with a rawhide mallet to full and solid bearing. Exercise particular care to equalize bed and joint openings and eliminate the need for redressing of exposed surfaces.
- E. Place setting buttons under heavy salvaged stone and precast concrete in the same thickness as joint and in sufficient quantity to avoid squeezing mortar out. Provide anchors, supports, fasteners and other attachments shown or necessary to secure work in place. Shim and adjust accessories for proper setting of work.
- F. Tamp and beat salvaged stone and precast concrete to level and embed them in setting bed to full, solid and even bearing. Exercise care to equalize bed and joint openings. Take every precaution to prevent direct bearing contact between pieces. Set and level each stone in single operation, prior to initial set of setting bed. Do not return to areas already set and disturb stone for leveling purposes. Do not saw through mortar joints to correct bearing or adjust joint. Do not use pinch bar on exposed face of salvaged stone or precast concrete.
- G. Salvaged stone and precast concrete Joints: Butter vertical joints for full width before setting and set units in full bed of mortar, unless otherwise indicated. Rake out all joints approximately 3/4 inch before mortar is set to allow mortar repointing. Repoint joints in two equal thickness of mortar.

3.03 HORIZONTAL JOINT REINFORCING

- A. Provide continuous horizontal joint reinforcing as shown and specified. Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inches on exterior side of walls and 1/2 inches at other locations. Lap reinforcement a minimum of 6 inches. Do not bridge control and expansion joints with reinforcing unless otherwise indicated. Provide continuity at corners and wall intersections by use of prefabricated "I" and "T" sections. Cut and bend units as directed by manufacturer for continuity at returns, offsets, pipe enclosures and other special conditions.
- B. Space continuous horizontal reinforcing not more than 16 inches on centers vertically.
- C. Reinforce masonry openings greater than 1 foot wide, with horizontal joint reinforcing placed in 2 horizontal joints approximately 8 inches apart, both immediately above lintels and below sills. Extend reinforcing a minimum of 2 feet beyond jambs of the opening, bridging control joints where provided.

3.04 ANCHORING MASONRY

- A. Provide anchoring devices of the type shown as specified. If not shown or specified, provide standard type for facing and backup involved.
- B. Anchor masonry with metal ties embedded in masonry joints and attached to backup. Provide anchors with adjustable sections, unless otherwise indicated. Space adjustable anchors as shown, but not more than 24 inches on centers vertically and 16 inches on centers horizontally

3.05 FLASHING OF MASONRY WORK

- A. Provide concealed flashing in masonry work at, or above all shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall so as to divert such water to the exterior. Prepare masonry surfaces smooth and free from projections that could puncture flashing. Place through wall flashing on bed of mortar and cover with mortar. Seal penetrations in flashing with mastic before covering with mortar.
 - 1. Extend flashings the full length of lintels and shelf angles a minimum of 4 inches, and through the inner wythe to within 1/2 inch of the interior face of the wall in exposed work. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2 inches.

3.06 REPAIR AND POINTING

- A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge any voids or holes, except weepholes, and completely fill with mortar. Point-up all joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of sealant compounds.

3.07 CLEANING

- A. Promptly as work proceeds and upon completion, remove excess mortar, smears, droppings.
- B. Clean adjacent and adjoining surface of marks arising out of execution of work of this Section.
- C. Sweep up and remove daily sand, cleaning compounds and mixtures, dirt, debris and rubbish.
- D. Clean soiled surfaces using a non-acidic solution that will not harm masonry or adjacent materials. Consult masonry manufacturer for acceptable cleaners. Use non-metallic tools in cleaning operation. Cleaning methods are subject to Landscape Architect's approval.

END OF SECTION

DIVISION 5 - METALS

SECTION 05 03 00 – CONSERVATION TREATMENT FOR PERIOD METALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Conservation of exposed metal on tomb facade including metal door and frame.
 - 1. The work of this section consists of the provision of all materials, labor, equipment and the like necessary and/or required for the complete execution of the conservation treatment of one set of steel doors, frame and remaining tomb hardware remnants. All proposed treatment steps and materials shall be approved by the Landscape Architect prior to implementation.
 - 2. The Artifacts: The steel doors and frame are not original to the tomb, but were added about 1945 to allow use of the tomb for temporarily housing the bodies of men from Somerville coming back from WWII for burial. It is the intention to have the doors conserved to present them as original in good condition but with some aging of the material acceptable. They should be made operable and lockable. There is evidence of earlier steel hardware at the other tombs that is also to be conserved.
 - 3. Condition: The doors and frame are dirty, corroded and the green paint is flaking overall. The set of doors overlap when closed and have been latched with two horizontal bars. In addition, they have been welded shut. There has been a clear attempt to force entry into the tomb, possibly with a crowbar, as the central overlapping portion has been forced outward. The attempt was unsuccessful, but has stretched and deformed the metal. There are two sets of hinges on the doorframes, however only the right side is engaged with pins mounted into the brickwork. Hardware for the other doors has been cut off, but protrudes and is rusting. Many of these fasteners appear to have been set in lead, and in a few cases, only the lead remains.
- B. Furnish and install all accessory items including hardware, connecting angles, clip angles, bolts, welds, framing and supports, and bracing members necessary for a complete installation.
- C. All other items of work shown or reasonably inferred to make the work of this Section complete.

1.02 RELATED SECTIONS

- A. Section 04 20 00 – Unit Masonry.
- B. Section 09 91 13 – Exterior Painting.
- C. Section 31 10 00 – Site Clearing.

1.03 QUALITY ASSURANCE

- A. All work shall comply with the United States Secretary of the Interior Standards for Rehabilitating Historic Building and the AIC Code of Ethics and Guidelines for Practice.
- B. Codes and Standards: Perform all work in accordance with all applicable safety codes. Comply with the standards of the following associations except as otherwise required:

1. AISC (American Institute of Steel Construction).
 - a. Code of Standard Practice for Steel Buildings and Bridges.
 - b. Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings including supplements and commentary.
 - c. Specifications for Structural Joints using ASTM A325 or A490 Bolts approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
2. AWS (American Welding Society): D1.1 "Structural Welding Code".
- C. Steel Materials: Provide steel chemically suitable for metal coatings complying with the following requirements: Carbon below 0.25 percent, silicon below 0.24 percent, phosphorous below 0.05 percent, and manganese below 1.35 percent.
- D. Fabricator Qualifications: A metalworker or metal conservator having no less than five years of experience on comparable historic preservation projects shall perform the work of the contract. The Contractor shall submit references for a minimum of three successfully completed projects of a similar nature. The Contractor shall employ personnel skilled in the processes and operations indicated and required, and maintain a steady crew for the duration of the project.
- E. Welding Qualifications: Quality processes and operators in accordance with AWS "Standard Qualification Procedure". Certify that welders have passed AWS qualification test within the past 12 months.
- F. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- G. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Coordinate with Section 09 91 13. Use only thinners approved by paint manufacturer, within recommended limits and in accordance with manufacturer's directions.
- H. Construction Tolerances:
 1. Variations from plumb: 1/4 inch in 10 feet.
 2. Variations from level: 1/4 inch in 20 feet.
 3. Variation of linear line: 1/4 inch in 20 feet.
 4. Variations from slope as indicated: 1/4 inch in 10 feet.
 5. Variations from flush in unit to unit offset: 1/32 inch.
- I. Landscape Architect shall approve transportation vehicles and packing methods in advance.
- J. The facility temporarily housing the doors shall meet standards for basic care and security of historic artifacts. In addition, the facility shall provide protection and humidity control for the steel during vulnerable phases of cleaning to prevent rust.

1.04 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide assemblies which, when installed, comply with the following minimum requirements for structural performance without exceeding the allowable design working stress of the materials involved, including anchors and connections. Apply each load to produce the maximum stress in each respective component of each metal fabrication.

1. Door hinges: Of a size and strength adequate to support the weight of the door and a concentrated load of 300 pounds applied at any point of the door.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
- C. Thermal Movements: Allow for thermal movement resulting from the following maximum change in ambient temperature in the design, fabrication and installation of door to prevent buckling, opening up of joints, overstressing of components, connections and other detrimental effects. Base design calculation on actual surface temperatures of materials due to both solar heat gain and night time sky heat loss.
 1. Temperature Change: 120 degrees F. ambient; 180 degrees F material surfaces.

1.05 SUBMITTALS

- A. Document the condition of the doors, frame and hardware before, during and after treatment using a 35 mm digital camera set to the highest level of resolution. This should result in images of a density equivalent to a photograph: 244 pixels /square inch for an 8" x 10" image or 13.6MB. These should be presented as either TIF images or DNG and burned onto a DVD for the owner's use. The images should include a professional color scale card, card containing the owner's name and date and some type of ruler for gaging the size of the object. Print out two Before Treatment and After Treatment images on 8 x 10 professional photography paper to include with the final report.
 1. Document the placement of the replicated parts using digital images, a sketch and a written report.
- B. Provide a written Condition Report and Treatment Proposal prior to treatment for authorization. Provide two copies of the final Treatment Report. Include the details of the treatment process and specifically, what materials were used. Include a DVD of images before, during (as needed) and after treatment as well as one set of Before and After Treatment archival prints. Provide maintenance recommendations with the final treatment report.
- C. Test the object's paint and primer for lead. The past employment of a lead primer is likely. For bidding purposes, assume the paint or primer contains lead and use facilities to handle lead removal and disposal in a safe and legal manner. Provide all necessary abatement and containment as an integral part of the work and bid price. Obtain authorization prior to starting the treatment procedure.
- D. Manufacturer's catalog data and specification sheets for each type of manufactured product, including certifications that each type complies with specified requirements. Include instructions for handling, storage, installation and protection.
- E. Reinstallation: Submit shop drawings for any proposed replacement parts for review. Written approval is required prior to implementation.
- F. Alternate Methods: If after the contract is awarded, alternate methods and materials to those indicated are proposed for any phase of the steel work, provide a written description, including evidence of successful use on other comparable projects along with standard submittals outlined above. Written approval is required prior to substituting any materials or methods.
- G. Submit a proposal and sample of the replica or replicated piece prior to manufacture of the whole for approval. The replication will not proceed without written approval of the submitted sample. The piece will be judged on skill of manufacture, accuracy of replication, and matching of surface texture and finish to the restored doors of the same type in good condition.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Protect and handle materials after fabrication in the shop, during loading, shipping, unloading at the site, storage and erection as required to prevent damage to finish surfaces, section contours, squareness, straightness and flatness of fabricated members.
 - 1. Use only material that is not subject to staining or discoloration for blocking and packing. Provide suitable packaging to prevent damage to surfaces and distortion of materials. For factory primed or factory finished materials use nylon slings or padded cables for handling.
 - 2. Handle to prevent chipping, breakage, soiling or other damage. Do not use pinch or wrecking bars without protecting edges with wood or other rigid materials. Lift with wide belt type slings wherever possible. Do not use wire rope or ropes containing tar or other substances that might cause staining. If required use wood rollers and provide cushion at end of wood slides.
 - 3. Store on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack to distribute weight evenly and to prevent breakage or cracking. Protect stored materials from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around materials. Keep members from touching each other by using wooden separators for stacking.
 - 4. Remove bent or damaged materials.
- B. Store in a suitable location protected from high heat, freezing or water immersion. Provide free circulation of air around surfaces.
- C. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions and directions for installation to comply with existing work to remain.

1.07 PROJECT CONDITIONS

- A. It is mandatory that maximum protection to the life and safety of all users of the site be provided at all times. Take all precautions necessary to protect the Cemetery from damage resulting from work under this section.
- B. Field Measurements: Check by accurate field measurements before fabrication, actual conditions of walls and other construction to which metal fabrications must fit. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.
 - 1. Where field measurements can not be made without delaying the work, guarantee dimensions and proceed with fabrication of products without field measurements. Coordinate construction to insure that actual opening dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.
- C. Comply with all current regulations for handling and disposal of lead and lead products.

1.08 WARRANTY

- A. Warranty that all materials furnished and work executed under this Section of the Specifications comply with Specifications and authorized changes thereto.
- B. Provide a two year warranty against defects related to workmanship or material failure. Specifically, the warranty shall apply to the set of historic doors, frame and remaining metalwork on the exterior of the tombs. It shall cover rusting of the metal substrate, corrosion between new steel and the historic steel components, peeling and defects of the finish, failure of welds or mechanical joints, defects related to installation methods or materials, and loss or deterioration of fills and replacement parts.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide metal forms and types that comply with requirements of referenced standards and that are free from surface blemishes where exposed to view in the finished unit.
 - 1. Exposed to view surfaces exhibiting pitting, seam marks, roller marks, rolled trade names, roughness, stains, discolorations or other imperfections on finished unit, and for sheet steel, variations in flatness exceeding those permitted by reference standards for stretcher-leveled sheet, are not acceptable.
- B. Provide all materials of the best commercial quality for the purpose intended, free from all defects that would impair the strength or durability of the work.
- C. Steel for plates, bars, angles and structural shapes conforming to ASTM A36.
- D. Replacement hardware and reinforcements conforming to AISI Type 302/304 stainless steel.
- E. Door hinges: Heavy duty with solid bronze pintles and washers.
- F. Padlock: Heavy duty approved by the Owner.

2.02 MISCELLANEOUS MATERIALS

- A. WELDING RODS, BARE ELECTRODES AND FILLER METALS: Select in accordance with AWS specifications for the type and metal alloy to be welded as recommended by the producer of the metal to be welded and as required for color match, strength and compatibility with the parent material joined in the fabricated items.
- B. NON-SHRINK NON-METALLIC GROUT: Premixed, factory packaged, nonstaining, noncorrosive, nongaseous grout complying with CE CRD-C621. Provide grout specifically recommended by manufacturer for exterior application.
- C. EPOXY GROUT: Conforming to ASTM C-881 and equal to "Sikadur 32, Hi-Mod" high strength adhesive as manufactured by Sika Corporation, Lyndhurst NJ.
- D. GREASE: Premium grade, high viscosity lithium with oxidation inhibitor and be effective for low and high temperatures.

2.03 FABRICATION OF METAL COMPONENTS

- A. Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or designated on accepted shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.
- B. Form exposed work true to shape and size, and line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise indicated. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing work. Cutting, shearing and punching shall leave clean, true lines and surfaces. Curved work shall be evenly sprung.

1. All exposed edges and ends of plates, bars, shapes or tubing shall be square and smooth, free of cutting marks, shear distortion, burrs and nicks.
 2. Mill joints to close fit. Provide uniform and consistent joints with all exposed copes, miters and butt cuts.
- C. Weld corners and seams continuously on all exposed surfaces and where required for strength on concealed surfaces in accordance with AWS recommendations. Tack welding will not be permitted unless specifically noted. Where flush butt joints are required, slightly oversize welds, fill with plastic filler and grind flat. Grind exposed connections smooth and flush to match and blend with adjacent surfaces.
1. Weld material: Electrodes, welding rods and filler metals are to be compatible in strength and appearance with the parent material joined.
 2. Weld Preparation: Remove weld spatter by chipping or grinding. Round sharp weld edges and corners to a smooth contour by grinding. Smooth undercuts and recesses by grinding. Grind porous welds down to pinhole free metal. Remove weld flux from the surface by washing with water.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated use Phillips flathead, countersunk, screws and bolts.
- E. Bolted Connections: Provide holes in bolted parts with 1/16 inch diameter greater than the nominal diameter of the bolt except where otherwise shown. Cut, drill or punch holes as required perpendicular to metal surfaces and so as not to deform or mar adjacent surfaces. No unfair holes will be accepted. Do not flame cut or enlarge holes by burning. Holes shall be clean cut without torn or ragged edges. Remove outside burrs resulting from drilling or punching operations.
- F. Provide for anchorage of type indicated, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use. Provide cardboard sleeves around all iron work to be set in masonry.
- G. Cut, reinforce, drill and tap miscellaneous metal work as indicated.
- H. Fabricate joints that will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Take field measurements prior to preparation of shop drawings and fabrication where possible. Do not delay job progress. Allow for trimming and fitting where taking field measurements before fabrication might delay work.
- B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be imbedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.02 CONSERVATION

- A. Disassemble the doors by applying machine oil to the hinges and letting this sit prior to use of force.
- B. Clean surfaces of as noted in Section 09 91 13.
- C. Once the corrosion is removed, assess the original hardware in conjunction with the Landscape Architect for structural stability and replace as required. Save and return all original hardware found to be deficient to the Owner for storage. If replacement is required, provide new stainless steel hardware isolated from historic steel using a non-conductive barrier.
- D. Once the metal is revealed, assess and document the structural stability of the steel with digital images and a written report. Determine the method for cutting through the weld to separate the doors and grinding off of the excess weld material that will cause least damage. Reinforce weakened elements. After consultation and in agreement with the Landscape Architect, repair deformed metals, replace severely corroded elements with steel replicas, attached by welding or mechanical rivets, isolated from the original metal. All original material removed from the door and frame shall be retained, labeled and returned to the Owner. Stamp all replicated pieces with the date of manufacture.
- E. Provide the steel doors including fasteners, hinges, etc. similar in appearance to that of the historic work.
- F. Install hardware on the doors that allows them to be opened for inspection of the tomb periodically, but otherwise to remain securely locked.
- G. Pack and transport the doors, frame and hardware to the Cemetery.
- H. Clean out and re-use existing holes in the surrounding masonry to install the doorframe at the tomb. Install the doorframe. Fill crevices and gaps surrounding the metal with epoxy grout to prevent the infiltration of water as much as possible.

3.03 INSTALLATION

- A. FASTENING TO IN PLACE CONSTRUCTION: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in place construction, including threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws and other connectors as required.
 - 1. Set door and frame as indicated on the Drawings, plumb and in alignment. Drill or core concrete or masonry in a neat fashion such that the hole is 1 inch maximum greater in diameter than the post to be placed in it. Provide sinkages for supports as shown and as necessary to secure work in place. Cut and backcheck as required for proper fit and clearance. Clear post holes of loose material. Provide cardboard sleeves around all iron work to be set in masonry. Fill the space between the concrete or masonry and iron work solidly with non-shrink non-metallic grout.
- B. CUTTING, FITTING AND PLACEMENT: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment, elevation, level, true and free of rack, measured from established lines and levels.
 - 1. Provide all temporary bracing, guy wires, turnbuckles, horizontal struts, etc., as may be required to plumb and hold the metal fabrications in place and aligned at all times during assembly and to take care of all lateral and vertical loads to which the work may be subjected. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry or similar construction.

2. Do not field modify any shop assembly unless approved by Landscape Architect.
- C. FIELD WELDING: Comply with AWS Code for procedures of manual shielded metal arc welding, appearance and quality of welds made, methods used in correcting welding work and the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.
- D. EXPOSED CONNECTIONS: Fit exposed connections accurately together to form tight hairline joints that cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up primer and shop paint coats. Do not weld, cut or abrade the surfaces of exterior units which have been hot dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- E. BOLTED CONNECTIONS:
1. All structural joints using high strength steel bolts shall be friction connections.
 2. Do not drive bolts into holes so as to injure threads. Make the hole fair by further drifting or removing burrs.
 3. Tighten bolts in a sequence toward free edges and in a manner to distribute loads evenly.
 4. Do not mix bolt heads and nuts. Keep each on one side of the connection. For exposed connections, keep heads on the visible side where practical.
 5. If a high strength bolt has been torqued and for any reason it must be removed, it shall not be used again in the work.
 6. Tighten high strength bolts using impact or torque wrenches and turn-of-the-nut method. Frequently check the calibration of the gauges on torque wrenches used for tightening or checking bolts. The minimum tension and corresponding required torque for bolts of different sizes shall be in accordance with the latest standard acceptable practice of ASTM A325 and A490 bolts with a minimum fastener tension of 70% of the minimum specified tensile strength of the bolts.
- F. Setting Loose Plates: Clean concrete and masonry bearing surfaces of any bond reducing materials and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
1. Set loose leveling and bearing plates on wedges or other adjustable devices. After bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout. Use nonmetallic nonshrink grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.
- G. Door: Hang door leaves plumb, level and secure for full opening without interference. Provide appurtenances as indicated on the Drawings including but not limited to padlock. Adjust hardware for smooth operation and lubricate where necessary. No sag or twist will be allowed in door.

3.04 TOUCH-UP AND REPAIR

- A. For damaged and field welded metal coated surfaces, clean welds, bolted connections, abraded areas and surfaces to which paint was omitted for field welding. Touch up finish in conformance with coating manufacturer's recommendations. Provide touch up such that repair is not visible from a distance of 3 feet.

3.05 PROTECTION

- A. Protect materials, fabrications, and assemblies with metal coatings from damage during construction using methods approved by fabricator, galvanizer and coating manufacturer.

3.06 FIELD QUALITY CONTROL

- A. Check horizontal and vertical lines for variations from plane to ensure erection of completed members within the required dimensions and tolerances as shown and as specified.
- B. Check bolted connections for structural joints with minimum testing as defined in item 6D5 of "Specifications for Structural Joints using ASTM A325 or A490 Bolts".
- C. Check welded connections in accordance with AWS Section 6: Visual inspection of 100% of welds and ultrasonic inspection of 50% of full and partial penetration welds. Increase the inspection rate to 100% if the rejection rate exceeds 5%.

END OF SECTION

DIVISION 9 - FINISHES

SECTION 09 91 13 – EXTERIOR PAINTING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Protection, surface preparation, coating, finishing and cleaning of exposed exterior items and surfaces including, but not limited to:
 - 1. Painting all exterior metals at tomb façade including metal door and frame.
 - 2. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts and labels except where otherwise noted.

1.02 RELATED WORK

- A. Section 05 03 00 – Conservation Treatment for Period Metals.

1.03 QUALITY ASSURANCE

- A. Historic Paint Analysis
 - 1. Goal: To provide information to the Landscape Architect regarding the sequence of primer and paints including their color and sheen on the 1947 tomb door, both interior and exterior. The paint analysis process includes collection of samples, documentation of where the samples were taken, laboratory analysis and the creation of a report with recommendations for matching paint colors using Munsell or CIE values or other acceptable system.
 - 2. Schedule: Allow ample time for the entire process. This should be one of the first activities undertaken once the contract is awarded.
 - 3. In order to obtain reliable information, the historic paint analysis shall be carried out by a Conservator or Conservation Scientist, such as James Martin of Orion Analytical, LLC in Williamstown MA or other comparable institution specializing in the analysis of historic paints and able to identify the original sequence of colors. (Historic New England may provide further recommendations for analysts.) Specifically, the requirements are as follows:
 - a. The conservator/conservation scientist (Analyst) must have experience in sampling techniques, the ability to identify locations on the structure where complete stratigraphies are likely to exist, and where original paint colors are least likely to have degraded.
 - b. Laboratory analysis of the samples must be performed by an Analyst with experience in the techniques of microscopy and microchemical testing techniques.
 - c. The Analyst must have knowledge of historic architecture and building history, architectural finishes and their materials and manufacture, and an understanding of how color and pigments age.

4. Duties of the Analyst:
 - a. Collect samples as necessary to develop paint chronologies and identify paint colors from the requested time period. Document the location of all samples both in a sketch or digital image and written in the report. Retain the prepared sample for the Owner to allow future testing to replicate results, utilize new techniques, or to derive additional information.
 - b. Determine if lead is present.
 - c. Determine whether linseed oil or latex paint was used.
 - d. Process, analyze and curate paint samples taken in the field.
 - e. Develop paint chronology charts for all paint layers on the sampled surface, identifying colors by their common color names. Match the paint layers for the requested interpretive period to CIE L*a*b*, Munsell and to the closest paint match from the line of the approved paint manufacturer.
 - f. Deliver a report that incorporates the methodology, analysis and results, including sample chips of the interpretive colors identified. The report will become part of the permanent documentation of the treatment.
- B. Qualified Applicator: Company specializing in commercial painting and finishing for 5 years, completing work of similar scope.
- C. Comply with the standards of SSPC [Steel Structures Painting Council] except as otherwise required:
 1. SSPC-PA2: Paint Thickness Measurement.
 2. SSPC-PAL: Paint Application Specification No. 1.
 3. SSPC-SP1: Solvent Cleaning.
 4. SSPC-SP2: Hand Tool Cleaning.
 5. SSPC-SP3: Power Tool Cleaning.
 6. SSPC-SP6: Commercial Blast Cleaning.
 7. SSPC-SP7: Brush Off Blast Cleaning.
 8. SSPC-SP10: Near White Metal Blast Cleaning.
 9. SSPC-Vis-1: Pictorial Surface Preparation Standards.
- D. Comply with the standards of Federal Specification TT-P-141C: Paint, Varnish, Lacquer and Related Materials except as otherwise required:
- E. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, within recommended limits and in accordance with manufacturer's directions.
- F. Include on label of containers: manufacturer's name, type of paint, manufacturer's stock number, color, batch number, instructions for reducing where applicable, label analysis. Paint material containers not displaying manufacturer's product identification will not be acceptable.
- G. Coordination of Work: Review other Sections of these specifications in which primers are provided to ensure compatibility of the total systems for various substrates. Upon request, furnish information on characteristics of finish materials to ensure use of compatible primers.
- H. Material Quality: Provide the manufacturer's best quality trade sale paint material of the various coating types specified.

- I. Provide products that comply with all state and local regulations including VOC/VOS rules at the time of application.
- J. All colors and paint finishes shall be as selected by Landscape Architect. Perform no painting until such color samples have been approved. Obtain approval prior to purchase and delivery.
- K. Field Quality Control: Request review of first finished item of each color scheme required by Landscape Architect for color, texture and workmanship.
- L. Test the object's paint and primer for lead. The past employment of a lead primer is likely. For bidding purposes, assume the paint or primer contains lead and use facilities to handle lead removal and disposal in a safe and legal manner. Provide all necessary abatement and containment as an integral part of the work and bid price. Obtain authorization prior to starting the treatment procedure.

1.04 SUBMITTALS

- A. Submit test cleanings of each proposed cleaning method on an area of the steel not visible to the public and no larger than 4" x 4" for approval. If air abrasive is proposed for use, different blasting media of varying hardness (e.g. glass beads, walnut shells, etc.) shall be tested at a range of low pressures (about 40 psi) and at a location on the artifact determined in conjunction in order to determine the minimum abrasive and pressure required to remove the surface coating and corrosion products. Blasting shall be done with an air compressor having a capacity of not more than 125 psi. Blasting shall not be performed when the relative humidity is above 85% or when the air temperature is within 5 degrees of the dew point.
- B. Complete list of the coating materials proposed for use, both factory and job mixed, to Landscape Architect before commencing any work. Provide manufacturer's name, product name and product line number for each material. Provide manufacturer's technical data sheet for each coating giving descriptive data, curing time, mixing, thinning and application instructions, and shelf life.
- C. Samples of manufacturers' latest color chips for selection by Landscape Architect.
- D. Prepared color samples (12"x12") for each color and finish required. Apply finishes on identical type materials to which they will be applied on the job.
 - 1. Identify each sample as to finish, formula, color name and number, and sheen name and gloss units.

1.05 MOCK UP

- A. Apply samples of paint colors to surfaces on the job in sizes and locations as directed by Landscape Architect. Change samples until desired colors are obtained. Do not paint out or destroy samples without express permission of Landscape Architect.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original containers with seals unbroken and labels legible and intact including instructions for mixing and/or reducing.
 - 1. Label to include manufacturer's identification, product identification, color designation, preparation instructions, application instructions, drying time, coverage capacity, tinting and mixing instructions, cleaning and disposal instructions.

- B. Storage of Materials: Store only acceptable project materials on project site, in a suitable protected and ventilated location within temperature range recommended by manufacturer. Comply with health and fire regulations.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating system can be applied.
 - 1. Apply water based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F [10 degrees C] and 90 degrees F [32 degrees C].
 - 2. Apply solvent thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F [7 degrees C] and 95 degrees F [35 degrees C].
 - 3. Apply urethane paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 60 degrees F [16 degrees C] and 95 degrees F [35 degrees C].
 - 4. Do not apply exterior paint in snow, rain, fog or mist, when the relative humidity exceeds 85 percent, at temperatures not less than 5 degrees F [3 degrees C] above the dew point, or to damp wet surfaces.
 - 5. Do not apply coating until moisture content of surface is within limitations recommended by paint manufacturer. Test with a moisture meter.
- B. Apply coatings only when work areas are reasonably free of airborne dust at time of application and when coating is drying.

1.08 PROJECT CONDITIONS

- A. All applicators shall wear protective clothing suitable for use with mineral spirit based materials. Avoid prolonged breathing of vapors.
- B. Protection: Cover or otherwise protect finished work of other trades and surfaces not being painted concurrently or not to be painted.
- C. Limit over spray on other nearby surfaces. Prevent over spray from coming into contact with persons, motor vehicles, trees, surrounding buildings and other objects not intended for treatment.

1.09 MAINTENANCE MATERIALS

- A. Provide Owner with not less than one (1) one gallon containers of each color and material used in clean, unopened, tightly sealed and clearly labeled containers.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. PAINT FOR FERROUS SURFACES: Subject to compliance with requirements, provide one of the following or approved equal [Select a single manufacturer for first and second coat]:
 - 1. First Coat: Tnemec Series 135 Chembuild; Axalta Corlan 18510s epoxy primer; or Carboguard 635 Epoxy Primer.
 - 2. Second Coat [Semi-gloss]: Tnemec Series 1075 Endura-Shield II; Axalta Imron MS600; or Carboxane 2000 satin.
- B. Colors to be selected by Landscape Architect. Application to be in conformance with paint manufacturers written recommendations.
- C. THINNERS: Materials approved by manufacturer of each product in accordance with manufacturer's directions.
- D. SOLVENTS: As recommended by manufacturer for removing product from objects not intended for treatment.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected.
 - 1. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

3.02 PROTECTION

- A. Exercise great care not to deface adjacent work. Cover or otherwise protect surfaces not being painted concurrently or not to be painted and the finished work of other trades. Remove removable device plates, escutcheons and similar items before painting and replace these items after paint has dried. Remove protective covering, masking tape, etc., when painting of surfaces or items is completed.

3.03 PREPARATION

- A. General Procedures: Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- B. Surface Preparation: Clean and prepare surfaces to be painted in accordance with the paint manufacturer's instructions for each particular substrate condition and as specified. Clean surfaces free of all dust, dirt, oil, wax, efflorescence and any other surface contaminants that may adversely affect adhesion, penetration or appearance.

1. Clean the surfaces of loose paint, bird droppings and dirt in a hygienic manner using a HEPA vacuum. Dispose of the vacuum bag as a toxic substance, if the paint or primer is found to contain lead.
 2. Clean the surface of old paint and primer. Mechanical removal of the degraded coatings and corrosion using air abrasive techniques requires using an appropriate blasting medium at the minimum possible pressure down to the metal surface. Care shall be taken not to cause excessive loss and scratching of the metal surface.
 3. Clean the remains of hinges and fasteners at the other tombs with a wire brush.
- C. Materials Preparation: Carefully mix and prepare paint materials in accordance with manufacturer's directions.
1. Do not use any material older than manufacturer's recommended shelf life.
 2. Do not use mixed material beyond manufacturer's recommended pot life.
 3. Deliver paints and enamels ready mixed to project site. Accomplish job mixing and job tinting only when acceptable to Landscape Architect. Use tinting colors recommended by manufacturer for the specific type of finish.
 4. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue. Use suitably sized non-ferrous or oxide resistant metal containers.
 5. Mix material according to manufacturer's latest printed instructions. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
 6. Thin material according to manufacturer's latest printed instructions. Use only thinners approved by paint manufacturer, and within recommended limits.

3.04 APPLICATION

- A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being used.
- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces or conditions detrimental to formation of a durable paint film.
- C. Provide finish coats that are compatible with primers used.
- D. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practical after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
 2. Comply with the recommendation of the material manufacturer for drying time between succeeding coats.
 3. Successive coats of paint shall differ sufficiently in shade so as to be readily distinguishable.

- E. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.
 - 1. Measure dry film thickness using magnetic film thickness gauge in accordance with SSPC-PA2.
- F. Prime Coats: Before application of finish coats, apply a prime coat of material as recommended by the manufacturer to materials that are required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in the first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.
- G. Pigmented [Opaque] Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, hair, runs, sags, streaks, ropiness, air bubbles, roller stipple, or other surface imperfections will not be acceptable.
 - 1. Apply additional coats when undercoats, stains or other conditions show through final coat of paint until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 - 2. Sand between applications where sanding is required to produce an even, smooth surface in accordance with the manufacturer's directions.
 - 3. Make edges of paint adjoining other materials or colors clean and sharp with no overlapping.
- H. Completed Work: Remove, refinish or repaint work not in compliance with specified requirements.

3.05 FIELD QUALITY CONTROL

- A. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when the paint is being applied.
 - 1. The Owner will engage the services of an independent testing laboratory to sample the paint material being used. Samples of material delivered to the project will be taken, identified, sealed and certified in the presence of the Contractor.

2. The testing laboratory will perform appropriate tests for the following characteristics as required by the Owner:
 - a. Quantitative materials analysis.
 - b. Abrasion resistance.
 - c. Apparent reflectivity.
 - d. Flexibility.
 - e. Washability.
 - f. Absorption.
 - g. Accelerated weathering.
 - h. Dry opacity.
 - i. Accelerated yellowness.
 - j. Recoating.
 - k. Skinning.
 - l. Color retention.
 - m. Alkali and mildew resistance.
3. If test results show material being used does not comply with specified requirements, the Contractor may be directed to stop painting, remove noncomplying paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are noncompatible.

3.06 CLEANING AND PROTECTION

- A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish and other discarded paint materials from the site.
- B. Remove all equipment, materials and debris caused by work of this Section and leave the site of the work in a clean condition insofar as this work is concerned.
- C. Provide "Wet Paint" signs and other devices as necessary to protect newly painted finishes.
- D. Rectify any damage to adjacent work caused by painting operations. Touch up and restore finishes where damaged. Remove spilled, splashed or spattered paint from all surfaces. Repaint entire item where portion of finish has been damaged or is unacceptable.
- E. Protect all painted surfaces against damage until the date of substantial completion. All finished work under this Section shall have perfect surfaces when completed work is ready for inspection for substantial completion. Repair or retouch all areas which do not comply with requirements of this Section for any reason whatsoever to the satisfaction of Landscape Architect at no additional cost to Owner.

END OF SECTION

DIVISION 31 - EARTHWORK

SECTION 31 10 00 - SITE CLEARING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Protection of existing buildings, walls, tombs, monuments, gravestones, paving, vegetation and utilities to remain within and adjacent to the property.
- B. Removal of asphalt and concrete pavement, concrete and masonry foundations and walls, site vegetation, and other miscellaneous items as shown on the Drawings.
- C. Salvage of various site items.
- D. Disposal of all debris legally off site.

1.02 RELATED WORK

- A. Section 04 03 43 – Conservation Treatment for Period Stone.
- B. Section 04 20 00 – Unit Masonry.
- C. Section 05 03 00 – Conservation Treatment for Period Metals.
- D. Section 31 20 00 – Earth Moving.
- E. Section 32 12 00 - Flexible Paving.
- F. Section 32 92 19 – Seeding.

PART 2 – PRODUCTS

2.01 EQUIPMENT

- A. Equipment necessary for this work shall be properly maintained and in good operating condition. Remove and replace any equipment deemed to be in unsatisfactory repair or condition or otherwise unsuitable.

2.02 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

- A. General Requirements that Work be Complete:
 - 1. Provide same products or types of construction as that in existing structure as needed to patch, extend or match existing work.
 - a. Generally Contract Documents will not define products or standards of workmanship present in existing construction. Contractor shall determine products by inspection and any necessary testing, and workmanship by use of the existing as a sample of comparison.
 - 2. Presence of a product, finish or type of construction, requires that patching, extending or matching shall be performed as necessary to make work complete and consistent to identical standards of quality.

PART 3 - EXECUTION

3.01 PROTECTION OF GRAVESTONES, MONUMENTS AND TOMBS

- A. Do not lean equipment or limbs against gravestones, monuments, above ground tombs or masonry walls.
- B. The Contractor is prohibited from disturbing gravestones and monuments in any way. Gravestones are not to be removed from the ground or moved off their bases. In the event of damage, the Contractor shall immediately report the incident to the Owner. The Contractor shall then select a stone conservator who has at least 5 years experience in the successful restoration of gravestones and monuments of the given material. The stone conservator must be approved by the Owner. Repairs to damaged gravestones and monuments must be performed to specifications of Owner at the Contractor's expense. Weather permitting, all restoration work must be completed within 60 calendar days of the damage.
- C. The Contractor is prohibited from placing heavy equipment on top of any type of tomb structure. In the event of damage, the Contractor shall immediately report the incident to the Owner. The Contractor shall then select a masonry company who has at least 5 years experience in the successful restoration of historic masonry structures of the given material. The masonry company must be approved by the Owner. All plans and specifications for repair of damaged masonry systems must be reviewed and approved by the Owner prior to commencement of repair work. Weather permitting, all restoration work must be completed within 90 calendar days of the damage at the Contractor's expense.

3.02 TREE AND SHRUB PROTECTION

- A. Protect all trees and shrubs to remain in the construction areas indicated on the Drawings or as directed in the field.
- B. Do not injure or deface vegetation to remain. Repair or replace any damaged items using a Certified Arborist approved by Landscape Architect. In the event that repair or replacement is not feasible, the Contract sum shall be reduced by the value of the damage based on the latest Standards approved by International Society of Arboriculture.
- C. Do not use trees that are to remain for any purpose such as crane stays, guy anchors, etc. Do not place debris where damage to trees may result. Do not store materials, equipment or vehicles within drip line of trees to remain.
- D. As approved by Landscape Architect, remove any roots and branches that would interfere with normal construction operations, or that need to be removed to balance the trees, without injury to trunks. Remove girdling roots. Do any additional cutting or trimming only as necessary and in accordance with accepted standards of International Shade Tree Conference.
- E. Do not damage roots of trees that are to remain during excavation. When excavating or trenching within the branch spread of trees scheduled to remain, do so in a manner which will cause minimum damage to root systems. Do not cut tree roots over 2 inches in diameter. Do not leave surface roots exposed. Prune injured roots clean and backfill as soon as possible. Saw cut roots that are necessary to remove as well as injured roots.
 - 1. Notify Landscape Architect if any main root is encountered in the excavation. Obtain authorization prior to cutting and/or removal.

2. Temporarily cover exposed roots with wet burlap to prevent roots from drying out. Keep burlap saturated until roots are covered with earth. Cover roots with earth as soon as possible.

3.03 PREPARATION

- A. Provide interior and exterior shoring, bracing or support to prevent movement, settlement or collapse of structure and adjacent facilities to remain. Cease operations immediately and notify Landscape Architect if safety of structure appears to be endangered. Take precautions to properly support structure. Do not resume operations until safety is restored.
- B. Locate, identify, stub off and disconnect utility services that are not indicated to remain.

3.04 CLEARING, GRUBBING AND REMOVALS

- A. Within the actual construction area, remove all existing obstructions such as foundations, walls, slabs, fences, steps, pavements, granular base courses, utilities and the like, which are to be abandoned to at least 2 feet below final finish grades and to greater depths as required by new construction.
 1. At the Landscape Architect's discretion, certain obstructions may not be removed to full depth if removal, in the Landscape Architect's opinion, will negatively affect materials to remain.
 2. Use extreme caution to fully protect adjacent tombs, headstones and the like during these operations.
 3. The use of explosives will not be permitted.
- B. The Contractor shall be responsible for the methods used in this work including properly protecting against damage to all site improvements, utility lines, trees, lawns, etc. Check with the municipality and local utility companies for locations of all existing utilities that may be in use or abandoned. Investigate and ascertain that underground utilities are correctly located and that they have been shut off and/or abandoned before disturbing them.
- C. Backfill all stump holes and other holes from which obstructions are removed with material equal to or better than adjacent areas and compact in accordance with Section 31 20 00 of these Specifications. Do not use brush, chips, stumps or other organic debris as fill for these holes.
- D. Take down masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power driven masonry saw or hand tools. Do not use power driven impact tools.
- E. Temporary Enclosures and Barriers: Erect and maintain weatherproof enclosures at tomb where required to control outside elements such as weather, dust and the like, and remove and/or relocate same as required during and at completion of work under this Section. Provide temporary enclosures of such height and construction as to eliminate airborne dust, exterior rain, snow and other elements.
- F. Assign the work of removal, cutting and patching to trades qualified to perform the work in a manner to cause least damage to each type of work, and provide means of returning surfaces to appearance of new work.

- G. Salvage sufficient quantities of cut or removed material to replace damaged work of existing construction, when material is not readily obtainable on current market or when instructed to do so by Landscape Architect.
- H. Material to be salvaged for reuse under other Sections of these specifications:
 - 1. Precast concrete cap and marble plaques at tombs.
 - 2. Face brick from tomb facade.
 - 3. Iron tomb door and frame.
 - 4. The Owner retains the first right of refusal of anything found on the site.
- I. Handle all salvaged material carefully so as to prevent chipping and breakage, and to protect weathered faces. Store salvaged materials other than stone on timber platforms at least 6 inches above ground. Use extreme care to prevent staining or other damage during storage period.
 - 1. Coordinate removal of the doors with the Owner. Pack and crate historic work carefully to avoid damage during all transportation procedures. Transport doors to an off-site preservation facility, where they shall be cared for in an appropriate manner befitting an historic artifact. Use extreme care to protect from leaks and high humidity.
- J. Perform cutting and removal work to remove minimum necessary and in a manner to avoid damage to adjacent work. Cut finish surfaces such as masonry by methods to terminate surfaces in a straight line at a natural point of division.
- K. Cut all bituminous, concrete and masonry with an approved diamond blade concrete saw on a neat, straight line to the dimensions given, or directed. Remove the portion behind the cut with proper tools, keeping noise and disturbance to a minimum.
- L. Deliver and store salvaged material not to be reused in the project to the City of Somerville in an approved location.
- M. Legally dispose of all material not to be reused and rubbish off the site. On site burning will not be allowed.

3.05 DAMAGED SURFACES

- A. Patch or replace any portion of an existing finished surface which is found to be damaged, lifted, discolored or shows other imperfections, with matching material. When existing surface finish cannot be matched, refinish entire surface to nearest intersections.

3.06 CLEANING

- A. Perform periodic and final cleaning. At completion of work of each trade, clean area and make surfaces ready for work of successive trades.
- B. Wet down thoroughly dry and dust producing materials to be transported and all such work during removals to prevent spread of dust. Make all arrangements and pay for all water and necessary connections therefor.

END OF SECTION

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Stripping and stockpiling of loam.
- B. Excavating, filling, backfilling and grading as required for the construction of paths, site improvements and other site work.
- C. Providing, furnishing, placing and compacting of all fill and backfill materials as specified herein, as shown on the Drawings or as required.
- D. Furnishing and installing all temporary earth support for excavations as required by Federal, state and municipal laws and ordinances.
- E. Furnishing and installing temporary fencing and safety devices or controls as necessary.
- F. Protecting all existing structures, utilities, pavements, lawns, planting and other site improvements from damage due to construction.
- G. Performing all dewatering necessary to maintain excavated areas free from water from any source.
- H. Removing all abandoned utility lines that underlay new foundations. Properly terminate, cap and plug all such lines.
- I. Dust, erosion and sedimentation control.
- J. Removing and disposing of all unsuitable and surplus excavated materials from the site.

1.02 RELATED WORK

- A. Section 04 20 00 – Unit Masonry.
- B. Section 31 10 00 - Site Clearing.
- C. Section 32 14 13 – Flexible Paving.
- D. Section 32 92 19 – Seeding.

1.03 REFERENCES

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ANSI A10 Series standards: American National Standards Institute, "Safety Requirements for Construction and Demolition".
- C. ASTM: American Society of Testing Materials.
- D. MDPW: "Standard Specifications for Highways and Bridges", Department of Public Works, Commonwealth of Massachusetts, latest edition.

1.04 TESTING SERVICES

- A. The testing laboratory will be responsible for conducting and interpreting tests, state in each report whether or not the test specimens conform to all requirements of the Contract Documents and specifically note any deviation therefrom. Specific test and inspection requirements shall be as specified herein.

1.05 SUBMITTALS

- A. Submit manufacturer's catalog data, specification sheets and installation instructions for each type of manufactured product. Include instructions for handling, storage, installation and protection.

B. Test Reports:

1. Mechanical analysis on all specified soil materials.
2. Optimum moisture - maximum density of soils.
3. Field density tests.

1.06 QUALITY ASSURANCE

- A. Comply with all codes, laws, ordinances and regulations of governmental authorities having jurisdiction over this part of the work.
- B. Provide protection for all persons and property in accordance with ANSI/NFPA 241, Building Construction and Demolition Operations. Execute all work in such a manner as to protect existing buildings, streets, paths, curbs, paving, utility lines, structures, other facilities and adjoining property from damage by equipment, settlement, undermining, washout, frost and other hazards created by earthwork operations. Repair any damage due to water or earth pressures, slides, cave-ins, or other causes without additional cost to Owner.
- C. Provide the services of a Professional Engineer registered in the Commonwealth of Massachusetts to design, engineer, supervise and certify all shoring and bracing related to earthwork and excavation.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Protect and handle manufactured materials during loading, shipping, unloading at the site, storage and erection as required to prevent damage.

1.08 BENCH MARKS AND ENGINEERING

- A. Lines and grade work in accordance with the Drawings and Specifications shall be laid out by a Massachusetts registered Civil Engineer or Land Surveyor employed by the Contractor. Establish permanent bench marks, as required, to which access can be easily had during the progress of the work. Maintain all established bounds and bench marks and replace as directed any which are disturbed or destroyed. Establish lines and grades in conformity with the Drawings. Establish and maintain suitable stakes and reference points over all areas to be graded to properly perform the work.
- B. Verify dimensions and elevations on the ground and report any discrepancies immediately to the Landscape Architect. Any discrepancies not reported prior to construction shall not be the basis for claims for extra compensation.
- C. The Drawings indicate, in general, alignment and finish grade elevations. The Landscape Architect, however, may make such adjustments in grades and alignments as are found necessary in order to avoid interference with any special conditions encountered.

1.09 DEFINITIONS

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

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

1.10 EXISTING CONDITIONS

- A. Site Information: The Owner and Landscape Architect assume no responsibility for the Contractor's failure to make his own site investigation and makes no representation regarding the character of the soil or subsurface conditions which may be encountered during the performance of the work. Bidders are expected to examine the site and then decide for themselves the character of materials to be encountered.
- B. Existing Utilities
 - 1. Before starting earthwork, locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
 - 2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility Owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility Owner.
 - 3. Do not interrupt existing utilities serving facilities occupied or used by Owner and others, during occupied hours, except when permitted in writing by Owner and then only after acceptable temporary utility services have been provided.
 - a. Provide minimum of 48 hour notice to Owner, and receive written notice to proceed before interrupting any utility.
 - 4. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut off of services if lines are active. Plug and/or cap abandoned utilities as required.

- C. Retaining Structures: Provide bracing, shoring, sheeting, temporary tie backs, rock anchors and rock bolts, sheet piling, underpinning or other retaining structures necessary to prevent any movement or settlement of existing or new construction, utilities, paving, light standards, piping or conduit.
 - 1. Responsibility for the strength and adequacy of retaining structures, and for the safety and support of construction, utilities or paving, and for any movement, settlement or damage thereto shall be the Contractor's responsibility. In exercising this responsibility the Contractor shall, if required retain a licensed Professional Engineer registered in the Commonwealth of Massachusetts to design, check and approve all temporary retaining structures and other items pertinent to this work.

1.11 PROTECTION

- A. Before starting the earthwork, locate all existing utilities. Protect all existing utilities to remain at all times. Report any uncharted or incorrectly charted lines to the Landscape Architect for further direction. Immediately repair damage to existing utilities as the result of the Contractor's operations and /or improper protection to the satisfaction of the Landscape Architect without additional expense to the Owner. Remove all abandoned utilities that interfere with the new work under the work included under this Section. Plug and /or cap abandoned utilities as required. Excavation and backfilling shall be provided as specified hereinafter.
- B. Do not damage roots of trees that are to remain during topsoil stripping or excavation. When excavating or trenching within the branch spread of trees scheduled to remain, do so in a manner that will cause minimum damage to root systems. Do not cut tree roots over 2 inches in diameter. Do not leave surface roots exposed. Prune injured roots clean and backfill as soon as possible.
- C. Provide, install, maintain and remove all sheet piling, shoring, bracing or underpinning required for the protection of all items of this Contract affected by the work of this Section. Protect open excavation with fencing, warning lights and other suitable safeguards.
- D. Furnish all facilities and materials necessary to prevent the earth at the bottom of excavation from becoming frozen or unsuitable to receive footing or other load bearing units.
- E. Provide, maintain and pay for all pumps, suction and discharge lines and /or other devices necessary to keep all excavations, pits, trenches, foundations and the property area free from water from any source whatsoever during the progress of the work. The dewatering system shall be adequate to drain the excavation areas and maintain the water at the required levels until structures have reached such elevations and attained such strengths that no damage shall result from contact with water. Under no circumstances lay pipe or install appurtenances in water. Keep all trenches free from water until they have been backfilled.

1.12 EROSION CONTROL

- A. It shall be the responsibility of the Contractor to render the site erosion free. Approval by Landscape Architect of any method to accomplish this does not relieve the Contractor of full responsibility for controlling erosion and /or sedimentation throughout the construction process.

1.13 SCHEDULING AND SEQUENCING

- A. Proceed with and complete installation as rapidly as portions of the site become available, and soon enough to meet the requirements to control sediment and erosion effectively prior to disturbance of significant portions of the site. Provide protection to control sediment and erosion during and after construction.
 - 1. Materials: Install during any season of the year provided that the ground is not substantially frozen and may be effectively excavated, compacted and smoothed.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. ORDINARY FILL shall conform to the requirements of Section M1.01.0 of MDPW. In addition it shall be clean, mostly granular, natural inorganic soil. It shall be free of organic or other weak or compressive materials, frozen materials, cinders, trash, rubble and stone larger than six (6) inches maximum dimension.
 - 1. Material from excavation on the site meeting the above requirements may be used as ordinary fill provided it has not been contaminated with unsuitable material.
 - 2. Material brought to the site shall match material from excavation on the site in regard to color and texture.
- B. GRANULAR FILL shall conform to the requirements of Section M1.03.0, Type c of MDPW.
 - 1. Material from excavation on the site meeting the above requirements may be used as the granular fills above provided it meets gradation requirements and has not been contaminated with unsuitable material.
- C. GRAVEL shall be processed gravel conforming to the requirements of Section M1.03.1 of MDPW.

2.02 USE OF FILL MATERIALS

- A. Ordinary Fill may be utilized as fill in landscaped areas up to subgrade and as backfill around the exterior of foundation walls and utility structures up to subgrade.
- B. Granular Fill shall be utilized as fill in the following locations:
 - 1. To replace unsuitable material.
 - 2. In all paved area embankments to subgrade.
 - 3. Elsewhere as shown on the Drawings or specified and wherever fill materials such as Ordinary Fill, Granular Fill or Gravel have not been specified herein or shown on the Drawings.
- C. Gravel shall be utilized as sub-base material for all paved surfaces, where so indicated on the Drawings or specified herein.

2.03 MISCELLANEOUS MATERIALS

- A. WARNING TAPE: Acid and alkali resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility. Prove tape colors to utilities as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, pavements and other facilities from damage by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff or airborne dust to adjacent properties and pavements.
 - 1. It shall be the responsibility of the Contractor to render the site erosion free. Approval by Landscape Architect of any method to accomplish this does not relieve the Contractor of full responsibility for controlling erosion and/or sedimentation throughout the construction process.
 - 2. Employ all methods and/or materials required to effectively control dust created by this work using sprinklered water or other approved means. Do not use oil or similar penetrants.

3.02 EXCAVATION

- A. Excavation is "Unclassified", and includes excavation to subgrade elevations indicated, or required to accommodate new construction, regardless of character of materials and obstructions encountered and shall be understood to include rock, shale, boulders, earth, hardpan, fill, foundations, pavements, curbs, piping and debris. It shall include the removal of all rubble, debris, foundations, pavement, utilities and appurtenances to two (2) feet minimum below finish grade.
- B. Before any other work is begun in this Section, strip topsoil to its entire depth from areas to be occupied by buildings, paved areas, utilities or any areas where the existing grade is to be changed. Strip topsoil free of subsoil, clay, large stones and debris. Do not damage roots of trees that are to remain during topsoil stripping. When excavating or trenching within the branch spread of trees scheduled to remain, do so in a manner that will cause minimum damage to root systems. Refer to Section 31 10 00 for protection measures.
 - 1. Pile topsoil separately from all other material in locations on the site approved by the Landscape Architect and authorities having jurisdiction, and preserve for finish grading and lawn operations specified under Section 32 92 19. Place, grade and shape stockpile for proper drainage.

2. Do not remove topsoil from the site without written permission of Landscape Architect. Remove excess topsoil not required for operations specified under Section 32 92 19 from the site only after receiving written permission from Landscape Architect.
 3. All topsoil shall remain the property of the Owner and shall not be removed from the site.
- C. Excavate to the following basic subgrades:
1. Foundations, footings and other site improvements: To exact elevations required.
 2. Paving: To elevations indicated on the Drawings.
 3. Lawn areas: To 6 inches below finish grade.
- D. Unauthorized Excavation: When suitable bearing material is encountered at subgrade elevations shown and excavation is made to greater depth, bring grade back to elevation required by providing compacted granular fill or by providing 3,000 psi concrete complying with ACI 301, of a mix approved by the Landscape Architect, at no additional cost to the Owner.
1. Fill unauthorized excavation under foundations or wall footings or retaining walls by extending bottom elevation of concrete foundation or footing to excavation bottom without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to Landscape Architect.
 2. Where indicated widths of utility trenches are exceeded, provide stronger pipe or special installation procedures as required by Landscape Architect.
 3. If foundation soils are disturbed by dewatering or other construction operation, remove all such loosened material and refill with compacted granular fill, crushed stone or concrete as determined by the Landscape Architect, at no additional cost to the Owner.
- E. Additional Excavation: When excavation has reached required subgrade elevations, notify Landscape Architect who will make an inspection of conditions.
1. If suitable bearing material, as determined by Landscape Architect, is not encountered at the subgrade elevations indicated, carry excavations deeper and replace excavated material with granular fill. Additional excavation work must be authorized in writing before additional excavation work can be performed.
 2. Removal of unsuitable material and its replacement as directed will be paid on basis of Contract conditions relative to changes in work.
- F. Exploratory Excavations: Work under this Section shall include the extent of exploratory excavation as required by field conditions, and as determined by the Landscape Architect, up to one hundred [100] cubic yards, to assist the Contractor in verifying utilities and obstructions. The locations of these excavations shall be adjusted by the Contractor to permit the Contractor to locate utilities in order to avoid damage or injury. This work shall be accomplished as necessary, by machine or by hand, without adjustment in Contract Price.
- G. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
1. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross braces, in good serviceable condition.
 2. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
 3. Maintain shoring and bracing in excavations regardless of time period excavations will be open.

4. No excavation will be permitted below a line drawn downwards at a 2 horizontal to 1 vertical from the underside of the closest edge of any proposed or in place footing or utility at higher elevation without providing adequate sheeting and bracing to prevent loss of support of the footing or utility.
- H. Dewatering: Prevent water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.
1. Protect subgrades and foundation soils from softening and damage by rain and water accumulation.
 2. Do not allow water to accumulate in the excavations. Remove water to prevent softening of foundation bottoms, undercutting footings and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 3. Establish and maintain temporary drainage ditches and their diversions outside excavation limits to convey rain water and water removed from excavations to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches. The disposal of water from excavations shall not cause damage to adjacent property and shall be in compliance with all applicable laws and regulations, in particular, those related to protection of water resources and other environmental features.
 4. Keep the water level in areas being compacted at least two (2) feet below the level at which compaction is being done at all times. Under no circumstances lay pipe or install appurtenances in water. Keep all trenches free from water until they have been backfilled.
- I. Material Storage: Stockpile satisfactory excavated materials where directed until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
1. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees to remain.
 2. Dispose of excess soil material and waste materials as herein specified.
- J. Excavation for Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction and for inspection.
1. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.
- K. Frost Protection
1. Make no excavations to full depth indicated when freezing temperature may be expected unless intended improvements can be accomplished immediately after the excavations have been completed. Protect bottom so excavated from frost if progress is delayed. Protect the subgrade of in place footings from frost. Should protection fail remove frozen materials and replace with concrete or granular fill as directed at no cost to Owner.
 2. Keep the site clear and free of accumulations of snow within the limit of the Contract lines as necessary to carry out the work of the Contract.
 3. Fill materials containing frost shall not be utilized, nor shall filling be done over frozen material.

4. Protect the underside of all in place construction from frost penetration during the construction period of this Contract. Such protection shall include all in place footings and slabs during all periods of freezing temperatures until such time as the entire project is complete. Minimum frost protection shall consist of a 4 foot thickness of earth, or equivalent in insulating properties.

3.03 BACKFILL AND FILL

- A. Place acceptable soil material in layers to required subgrade elevations, for each area as described in Paragraph 2.02 of this Section of the specifications. Remove vegetation, topsoil, debris, wet and unsatisfactory soil materials, obstructions and deleterious materials from ground surface prior to placing fills.
 1. Plow strip or break up sloped surfaces steeper than 1 vertical to 4 horizontal for fill material to bond with existing surface.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
 1. Acceptance of construction below finish grade including where applicable, dampproofing.
 2. Inspection, testing, approval and recording locations of underground utilities.
 3. Removal of concrete formwork.
 4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 5. Inspection of pruned exposed tree roots.
 6. Removal of trash and debris from excavation.
- C. Placement and Compaction: Place backfill and fill materials in uniform lifts of not more than 12 inches in loose depth for ordinary fill and 8 inches in loose depth for other materials compacted by heavy compaction equipment, and not more than 6 inches in loose depth for material compacted by hand operated mechanical compactors.
 1. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 2. Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately the same elevation in each lift.
 3. Do not place any fill material until structural members involved have sufficient strength to withstand the pressure to be imposed. Remove from spaces to be filled all unstable material, including all rubbish, trash, refuse and other debris.
 4. Coordinate backfilling with the installation of the work of all trades.
 5. Compact backfill to match adjacent areas as specified above. Correct settlement of fill by filling to subgrade levels in all areas where settlement occurs.
 6. Backfill trenches with concrete where trench excavations pass within 18 inches of column or wall footing and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing.
 7. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

- D. Freezing Weather: Protect soil below footings against freezing, before, during and after placement of concrete and foundations. Do not cast footings and slabs on frozen ground. If slabs are to be cast on ground that has been allowed to freeze, completely thaw all ground frost and recompact the surface prior to constructing the slab.
1. Footing Protection: Backfill concrete footings to a sufficient depth [up to four feet in unheated areas for significant periods of freezing weather] as soon as possible after they are poured. Alternatively, lowering the footings, use of insulating blankets or other effective means may be used for protection against freezing, if approved by Landscape Architect. Do not cast slabs in freezing weather until the building is enclosed and can be continuously heated.
 2. Do not place or compact fill beneath structures when ambient air temperatures are below freezing or when the fill could freeze prior to compaction.

3.04 COMPACTION

- A. Control soil compaction during construction providing minimum percentage density specified for each area classification.
- B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density of soils which exhibit a well defined moisture density relationship determined in accordance with ASTM D1557, Method C.
1. Pavements and Site Improvements: Compact top 12 inches of subgrade and each layer of backfill or fill material at 95 percent maximum density.
 2. Lawn or Unpaved Areas: Compact top 6 inches of subgrade and each layer of backfill or fill material at 85 percent maximum density.
- C. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material, to prevent free water from appearing on surface during or subsequent to compaction operations.
1. Control moisture of subgrades and fill materials by wetting and drying as needed to maintain moisture content within 2% of optimum moisture content as determined by ASTM D1557, Method C.
 2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
 3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to satisfactory value.
 4. If native soils become saturated and unstable during subgrade preparation operations stabilize the subgrade with filter fabric and crushed stone as necessary.
 5. Do not place backfill or fill material on surfaces that are muddy, frozen or contain frost or ice.
- D. Proofrolling: Proofroll naturally occurring soils at the base of the excavation with a minimum of four [4] passes of a ten [10] ton vibratory roller or equivalent effort. Should unstable areas develop as a result of proofrolling, stop compaction efforts. Overexcavate the unstable area a minimum of 12 inches and replace with 3/4 inch crushed stone wrapped with filter fabric.

- E. Bearing Capacity: Insure that bearing surfaces have a bearing capacity of at least 3 tons per square foot, unless otherwise indicated or required. This requirement is in addition to requirements for compaction to specified percentages of maximum dry density.

3.05 SUBGRADE PREPARATION AND GRAVEL PLACEMENT FOR PAVEMENTS

- A. Clean the rough subgrade of all loose, soft, foreign or other unsuitable material and reshape as required. Add suitable fill material to meet required grade.
- B. Compact to required grades and sections for paving. Tamp traces of trenches. Remove spongy or otherwise unsuitable material and replace with approved material. Loosen exceptionally hard spots and recompact. Take every precaution to obtain a foundation of uniform bearing power. In absence of specific requirement, compact foundation by such means as will provide firm base and insurance against settlement of superimposed work.
- C. Roll with wheeled roller having a weight per inch of width not less than 400 pounds. Begin rolling longitudinally at sides, overlapping each pass by one-half of rear wheel. Fill all depressions or settlements that occur. Continue until all stones are firmly interlocked and surface is true and unyielding. Compaction shall be in accordance with these Specifications. After final rolling, surface is to be free of depressions or irregularities greater than 3/8 inch in 10 feet.
- D. Construct base course as detailed on the Drawings for all areas of new paved surfaces in this Section. Placement of gravel base course shall conform to the requirements of MDPW except as herein modified.
- E. Spread gravel from self-spreading vehicles, approved type of power grader or by hand upon prepared subgrade. Spread evenly in layers so as to avoid separation of aggregates. Layers shall not exceed 6 inches in depth after compaction. Remove stones larger than 3 inches. When spread and rolled on the prepared surface, it shall form a stable surface. Compaction shall have a density of not less than 95% of maximum density determined in accordance with AASHTO-T-180 Method D. All rolling shall be done with a roller weighing 8 to 10 tons. Compact any portion that is not accessible to a roller by mechanical or hand tamper.
- F. Final rolled surface shall be true to the lines and grades indicated on the Drawings or as directed by the Landscape Architect. Fill any depression that may appear during and after rolling with gravel and reroll until the surface is true and even. Tolerance shall be 3/8 inch maximum above or below the cross-section grades and 3/8 inch maximum under a 10 foot line longitudinally.
- G. Maintain the surface of any layer in its finished condition until succeeding layer is placed. Properly drain the subbase at all times.

3.06 GRADING

- A. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- B. Grade areas to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:
 - 1. Lawn or unpaved areas: Finish areas to receive loam to within not more than 0.10 foot above or below required subgrade elevations.
 - 2. Paved areas: Shape surface of areas under paved surfaces to line, grade and cross section, with finish surface not more than 0.05 foot above or below required subgrade elevations.

- C. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.
- D. Complete the grading operations after utilities have been installed, site improvements included under this Contract have been completed and all rubbish, materials and debris have been properly disposed of.
- E. Do all cutting, filling, reshaping, regrading and recompacting as necessary to meet the requirements of the Drawings and this Section of the Specifications. Maintain subgrades at the levels specified until turned over to subsequent construction. Bring to required subgrade levels any areas where settlement, erosion or other grade changes occur.

3.07 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction: Allow testing service to inspect, test and approve each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
- B. If, in the opinion of Landscape Architect, based on testing service reports and inspection, subgrade of fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.

3.08 TESTS

- A. Testing laboratory will perform the following general services:
 - 1. Determine maximum dry density and optimum moisture content of soils in accordance with standards herein before specified.
 - 2. Provide optimum moisture - maximum density curves for undisturbed soil used for bearing and material used for compacted fill.
 - 3. Test and approve all subgrades and compacted fill layers before construction thereon.
- B. Testing laboratory will perform the following field tests: Determine frequency of field tests to assure densities required. Unless otherwise determined, minimum field testing shall be a density test for each 5,000 square feet of undisturbed subgrade and for each 5,000 square feet of overlying compacted fill.

3.0 9 PROTECTION AND REPAIR

- A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances.
- C. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape and compact to required density prior to further construction.
- D. Settlement: Where settling is measurable or observable, remove surface improvement [if any], excavate and remove soft material, provide fill material, compact properly and replace surface improvement [if any]. Restore appearance to eliminate evidence of patching or repair.

3.10 DISPOSAL OF UNSUITABLE AND SURPLUS EXCAVATED MATERIALS

- A. Remove excess excavated materials, including unacceptable excavated material, trash and debris, and legally dispose of it off the project site.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 32 12 00 – FLEXIBLE PAVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Bituminous concrete pavement.

1.02 RELATED WORK

- A. Section 31 10 00 - Site Clearing.
- B. Section 31 20 00 – Earth Moving.
- C. Section 04 20 00- Unit Masonry

1.03 REFERENCES

- A. MDPW: "Standard Specifications for Highways and Bridges", Department of Public Works, Commonwealth of Massachusetts, latest edition.
- B. AASHTO: American Association of State Highway and Transportation Officials.
- C. ASTM: American Society for Testing and Materials.

1.04 QUALITY ASSURANCE

- A. Paving on public property shall comply with all laws, rules and regulations of governmental authorities having jurisdiction over such work.

1.05 TESTING LABORATORY SERVICE

- A. The testing laboratory will be responsible for conducting and interpreting tests. Each report shall state whether or not the test specimens conform to all requirements of the Contract Documents and will specifically note any deviation therefrom if any. Specific test and inspection requirements shall be as specified herein.

1.06 SUBMITTALS

- A. Mix designs and supporting test data for asphaltic mixtures.
- B. Report on tests of in place construction of top and bottom courses of bituminous pavements.
- C. Manufacturer's certificates and data for asphalt prime and tack coat, and any other items requested by Landscape Architect.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Install bituminous concrete pavement in accordance with temperature and weather limitations specified in MDPW.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. BITUMINOUS CONCRETE PAVEMENT shall be Class I conforming to the requirements of Section 460.20 to and including 460.40 and M3.11.00 for binder course and dense mix of MDPW except as herein modified. Provide dense mix with 100% passing a 3/8 inch sieve, a voids content of less than 9% and 7.5 to 9.5% AC-20.
- B. TACK COAT shall conform to the requirements of Section M3.11.06B of MDPW.

PART 3 - EXECUTION

3.01 BITUMINOUS CONCRETE PAVING

- A. Install bituminous concrete paving as shown on the Drawings and in accordance with the Section 460.60 to and including 460.68 of MDPW except as herein modified.
- B. The bottom course shall conform to MDPW for binder course bituminous concrete and the surface course shall conform to MDPW for dense mix bituminous concrete in accordance with the job mix formula.
- C. The surface of the binder course shall be parallel to the proposed grade of the finished surface. The finished surface of the surface course shall conform to the grades shown on the Drawings and to the tolerances specified in Section 460.67 of MDPW except as herein modified. The surface tolerance of the surface course shall be 1/8 inch when measured in any direction with a 10 foot straight edge.
- D. All joints at existing paving shall be sawed vertical butt joints which shall receive a light coating of asphalt emulsion a short time before new paving commences. Interface between new and existing pavement shall result in a smooth continuous surface.

3.02 ALTERATION AND RESTORING STREETS AND SIDEWALKS

- A. Wherever streets or sidewalks to remain within or outside the limit of work have been excavated in fulfilling the work required under this Contract, furnish and install all material necessary to bring finish surfaces level with the existing adjacent surfaces. All work shall be installed to match the existing conditions. Notify the proper authorities prior to restoring surfaces.

3.03 PROTECTION

- A. Properly protect new and existing paving, steps, curbs, walls, lights and planting against splashing and spattering from asphalt, bitumen and color surface system during preparation and installation of pavement. Any materials so damaged shall be removed and replaced or satisfactorily sandblast cleaned at no additional cost.

3.04 FIELD QUALITY CONTROL

- A. The testing laboratory shall make the following inspections and tests:
1. Test paving materials for compliance with MDPW, or furnish accepted certificate of compliance from source of supply.
 2. Test bituminous concrete in accordance with MDPW, including:
 - a. Penetration Tests.
 - b. Marshall Stability Tests.
 - c. Voids Test.
 - d. Percent of Bitumen Test.
 - e. Aggregate Gradations.
 - f. Certifications required by MDPW.
 3. Verify thickness of the finished bituminous pavement construction obtained from specimens cut by the testing laboratory with a core drill. The diameter of the specimens shall in no case be less than 3-7/8 inches nor more than 4 inches.
- B. Remove specimens at location designated by the Landscape Architect. The Contractor shall immediately refill the resulting holes with a bituminous material meeting these specifications, compacted and finished to the satisfaction of the Landscape Architect without additional cost to the Owner.
- C. If any of the above tests indicate that the Specifications have not been met, the Contractor shall pay for such additional tests as may be required to assure that compliance has been attained.

END OF SECTION

SECTION 32 92 19 - SEEDING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Preparation of final subgrades in lawn areas; furnishing and spreading of topsoil; finish grading; application of soil conditioners; erosion control; seeding; maintenance; protection; and guarantee.

1.02 RELATED WORK

- A. Section 31 10 00 - Site Clearing.
- B. Section 31 20 00 – Earth Moving.

1.03 REFERENCES

- A. ASTM: American Society for Testing and Materials.
- B. Federal Specification JJJ-S-181b, Seeds, Agricultural.
- C. Federal Specification O-F-241c(1), Fertilizers, Mixed, Commercial.
- D. SPN: "Standardized Plant Names", American Joint Committee on Horticultural Nomenclature, 1942 Edition.
- E. SRA-156: U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act.

1.04 QUALITY ASSURANCE

- A. Perform fine grading and lawn installation under the constant supervision of a qualified foreman with personnel familiar with the accepted procedure of lawn construction.

1.05 CERTIFICATES, INSPECTIONS, TESTS AND SUBMITTALS

- A. Provide a complete soil analysis for topsoil from all sources by a competent laboratory approved by Landscape Architect.
 - 1. Perform analysis in accordance with ASTM D422. Include in the analysis tests for physical properties, grain size, hydrogen-ion value, organic matter content and available nitrogen, phosphoric acid, potash and iron. Also include tests for soluble salts and other toxic elements or conditions that may be detrimental to plant growth.
 - 2. Provide analysis tests of topsoil sources until acceptance.
 - 3. Include recommendations for the kinds and quantities of soil amendments to be used in the report of the analysis. Submit the report of the analysis to Landscape Architect at least 30 days prior to delivery of topsoil to the site or use in the work.
 - 4. Topsoil shall be subject to retesting after delivery to the site if deemed necessary by Landscape Architect.
 - 5. All laboratory costs shall be paid by the Contractor.
- B. If requested, furnish Landscape Architect with duplicate copies of invoices for soil amendments used. Sampling and testing of each lot will be at the discretion of Landscape Architect. If and when bulk delivery and/or custom mixing of soil amendments is authorized, provide Landscape Architect with written notarized affidavit certifying the weight, analysis, name of manufacturer and warranty for each item.

- C. Furnish Landscape Architect with manufacturer's certification of compliance to the Specifications prior to sowing seed. Provide producer's test reports indicating the results of seed purity, germination tests and weed content dated within 9 months of sowing.
- D. Comply with all applicable State and Federal laws in respect to inspection for plant diseases and infestation for all plants including seed. Provide certificates of inspection with the invoice for each shipment as may be required by laws for transportation.
- E. Furnish full and complete written instructions for maintenance of lawn areas to Landscape Architect at least 30 days prior to the end of the contractual maintenance period in order to familiarize the Owner with the maintenance requirements for the proper care and development of lawn areas.
- F. Submit manufacturer's catalog data, specification sheets and installation instructions for each type of manufactured product. Include instructions for handling, storage, installation and protection.

1.06 SCHEDULING AND SEQUENCING

- A. Perform the actual seeding of lawns only during periods within the season that is normal for such work as determined by weather conditions and by accepted practice in this locality.
- B. Perform seeding preferably between April 1 and May 15 or between August 15 and October 1.
- C. At the option of, and on the responsibility of, the Contractor seeding of lawns may be done under unseasonable conditions, or out of season, without additional compensation subject to the approval at the time of work and methods of operation by Landscape Architect. Lawn maintenance will be the same as for normal planting. Plant guarantee periods remain as specified. No frozen ground planting will be allowed.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Do not deliver TOPSOIL to the site until soil analysis has been approved by the Landscape Architect. Do not deliver topsoil to the site in a frozen or muddy condition.
- B. Deliver all SOIL AMENDMENTS and WOOD CELLULOSE FIBER MULCH to the site in manufacturer's standard containers showing weight, analysis, name of manufacturer and warranty. Append a summary of this product information to each invoice. Store in a weatherproof storage place in such a manner that they will be kept dry and their effectiveness not impaired. Caked or otherwise damaged soil amendments shall be rejected.
- C. Deliver SEED in original sealed standard sized containers. Label all seed in accordance with State regulations and SRA-156. Store seed in such a manner that it will be protected from damage by heat, moisture, rodents or other causes. Seed that has become wet, moldy or otherwise damaged shall be rejected.

PART 2 - MATERIALS

2.01 TOPSOIL

- A. Topsoil stripped and stockpiled as required by Section 31 20 00 of these Specifications shall be used for part of this work. It shall be free of any admixture of subsoil, stones larger than one (1) inch, clods of hard earth, plant roots, sticks or other extraneous materials.
1. Provide additional topsoil if required. It shall be fertile, friable, natural loam capable of sustaining vigorous plant growth. Topsoil shall be a "sandy loam" or a "fine sandy loam" of uniform composition as determined by mechanical analysis and based on the USDA classification system. In addition it shall meet the requirements of the following mechanical analysis:
- | <u>Sieve Size</u> | <u>% Retained</u> |
|-------------------|-------------------|
| 1 inch | 0 |
| 1/2 inch | 0-3 |
| No. 100 | 40-60 |
2. The clay content of the material passing U.S.S. No. 100 mesh shall not be greater than 60% as determined by the Bouyoucous Hydrometer or by the Decantation Method. The organic content shall be 5% to 20% as determined by the Thomas Rapid Test Method or by loss on ignition on moisture free samples dried at 100 degrees C. The pH value shall be between pH 6.0 and pH 6.5. It shall contain no toxic materials. Soluble salts shall not be greater than 75 parts per million. Add soil amendments if required at no additional cost to the Owner.
 3. The Contractor shall be responsible for estimating the quantity of topsoil stockpiled.

2.02 SOIL AMENDMENTS

- A. General: All soil amendments shall conform to the standards of the Association of Agricultural Chemists and comply with State and Federal regulations.
- B. LIMESTONE, if required, shall be free flowing Agricultural Grade Dolomitic Limestone ground to such fineness that 50% will pass a 100 mesh sieve and 98% will pass a 20 mesh sieve. Limestone shall contain at least 50% total oxides and not less than 85% total carbonates.
- C. ALUMINUM SULFATE, if required, shall be unadulterated commercial grade.
- D. GYPSUM, if required, shall be unadulterated commercial grade Calcium Sulfate.
- E. COMMERCIAL FERTILIZER shall be a complete natural organic fertilizer with a low salt index, uniform in composition and free flowing. Percentages of Nitrogen, Available Phosphoric Acid and Water-soluble Potash in the fertilizer mix shall be as recommended in the topsoil analysis.

2.03 GRASS SEED

- A. GRASS SEED shall be fresh, clean, dry, new crop seed meeting the standards of SRA-156. Seed shall be of the following varieties, mixed in proportion by weight and testing the minimum percentages of purity and germination.

<u>Pounds / 1000 SF</u>		<u>Percent Purity</u>	<u>Percent Germination</u>
3.0	Chewings Red Fescue	97	85
1.5	Kentucky Bluegrass	90	75
<u>0.5</u>	Annual Ryegrass	98	90
5.0			

1. Chewings Red Fescue shall consist of a blend of two or more of the following varieties: Intrigue II, Longfellow II, Seven Seas, Shadow II and Wrigley.
2. Kentucky Bluegrass shall consist of a blend of two or more of the following varieties: Bewitched, Diva, Jefferson, Kingfisher, Lakeshore, Mystere and Rhapsody.
3. Weed seed shall not exceed 0.5% by weight.

2.04 MULCH FOR SEEDED AREAS

- A. MULCH shall be natural and suited to horticultural use. It shall not contain lumps, roots or other foreign matter over one (1) inch in diameter. It shall be free from noxious weeds, seeds and other elements harmful to lawns. Mulch shall be subject to inspection and approval by the Landscape Architect at the source and upon delivery. Mulch shall contain not more than 35% moisture by weight. Mulch shall be one of the following at the Contractor's option:

1. Hay: Mowed and properly cured grass, clover or other acceptable plants. Salt hay is not acceptable.
2. Straw: Stalks or stems of grain after threshing.
3. Wood Cellulose Fiber: "Conwed Hydro Mulch" by Conwed Corporation, Minneapolis, Minnesota; "Silva-Fiber Mulch" by Weyerhaeuser Company, Tacoma, Washington; or approved equal.

- 2.05 WATER shall be free of substances harmful to plant growth. It shall be provided by the Contractor. Furnish all necessary hose, hose connections and watering equipment.

PART 3 - INSTALLATION

3.01 PREPARATION OF SITE

- A. Fully protect all grave markers, trees and other site features to remain in the construction area during these operations.
- B. After the subgrade of the areas required to be seeded has been brought to the grades shown on the Drawings, thoroughly till the subgrade to a depth of 6 inches by an approved method. Loosen subgrade which has been consolidated or compacted during construction so as to interfere with the porosity of the soil, or where the natural void ratio has been changed, to a depth of no less than 12 inches. Keep the top 3 inches free from stones, rock or other foreign matter 2 inches or greater in dimension.

- C. When tilling within the branch spread of trees scheduled to remain, do so in a manner which will cause minimum damage to root systems.
- D. Before spreading topsoil, establish finish grades, regrade subgrade as necessary to a true smooth slope parallel to and to the required depth below lawn areas and to eliminate depressions and ridges. Spread topsoil to meet finish grades smoothly and evenly. Provide sufficient grade stakes to insure correct line and grade of subgrade and finished grade. Where no grades are shown, provide a smooth and continual grade between existing or fixed controls and elevations shown on the Drawings. Request inspection and approval of subgrade by Landscape Architect before placing topsoil.
- E. During the spreading operation, rake topsoil and remove all rubbish and stones in excess of one inch in diameter. Do not spread topsoil while either topsoil or subgrade is in an excessively dry, frozen or muddy condition. Uniformly distribute topsoil with a minimum thickness of 6 inches in lawn areas. Thickness shall be measured after natural settlement and light rolling. Place topsoil only when it can be followed within a reasonable time by seeding operations. Mechanically remove any weed growth prior to seeding. Do not permit weed growth to go to seed.
- F. Prior to seeding operations request an inspection be made of the finished topsoil areas. Do not seed until Landscape Architect approves topsoil grade. Slope all lawn areas to drain. Correct finished surfaces to eliminate depressions holding water.

3.02 SEED BED PREPARATION

- A. After the topsoil has been spread and graded, apply soil amendments at the rate recommended in the topsoil analysis. Apply limestone at least 5 days prior to application of fertilizer. Apply commercial fertilizer within 10 days of seeding.
- B. Thoroughly and evenly incorporate soil amendments into the soil to a depth of 4 inches by discing or other approved method. In areas inaccessible to power equipment, use hand tools. After the incorporation of soil amendments into the soil, fine grade the bed to remove all ridges and depressions, and clear the surface of all stones one inch or more in diameter and other debris. Remove excessive quantities of smaller stones as directed by Landscape Architect.
- C. Seeding may be done immediately thereafter provided the bed has remained in a good friable condition and has not become muddy or hard. If it has become hard, till to a friable condition. Water dry soil to a depth of 4 inches 48 hours prior to seeding.

3.03 SEEDING

- A. Fine grade and seed the whole area within the limit of work not covered by buildings, structures, paving or otherwise designated areas, and all areas disturbed by construction outside the limit of work.
- B. Employ an approved method of sowing, using approved mechanical power seeders, mechanical hand seeders or other approved methods. When delays in operations extend the work beyond the most favorable planting season for species designated or when conditions are such that satisfactory results are not likely to be obtained, halt work as directed and resume only when conditions are favorable or when approved alternate or corrective measures and procedures have been effected. No seeding shall be done when the ground is frozen, excessively wet or otherwise nontillable.

- C. Broadcast seeding: Broadcast seed either by hand or with other approved sowing or hydraulic seeding equipment at the specified rate. Distribute seeds uniformly over designated areas. Sow half the seed with the sower moving in one direction and the remainder with the sower moving at right angles to the first sowing. Do not broadcast seed when wind velocity exceeds 15 mph. Use wood cellulose fiber mulch when hydroseeding at a rate of one ton per acre. Use hay or straw mulch with other seeding methods at a rate of one and one half tons per acre.
- D. Cultipacker or other approved similar equipment may be used to cover the seed and firm the seed bed in one operation. In areas inaccessible to cultipacker, lightly rake the seeded ground and roll in two directions with a water ballast roller. Take extreme care during seeding and raking to insure that no change occurs in the finished grades and that seed is not raked from one spot to another.

3.04 EROSION CONTROL

- A. It shall be the responsibility of the Contractor to render all lawn areas and plant beds erosion free. The Contractor may accomplish this by any of several alternate methods, any of which may be used provided such method is acceptable to the Landscape Architect. Approval of method by Landscape Architect does not free Contractor of responsibility for controlling erosion.

3.05 MAINTENANCE AND PROTECTION

- A. Maintenance and protection shall begin immediately upon completion of seeding operations and shall continue until acceptance or for at least 30 days or as much longer as necessary to establish a uniform stand of the specified grasses or until substantial completion, whichever is later with the following requirements.
 - 1. In the event that lawn operations are completed too late in the Fall for adequate germination and /or growth of grass, maintenance shall continue into the following Spring.
 - 2. Maintenance of lawn areas shall consist of watering, weeding, cutting, raking of leaves, repair of all erosion and reseeding as necessary to establish a uniform and knitted stand of the specified grasses.
 - 3. Furnish and apply such pesticides as are necessary to keep these areas free of insects and disease. Pesticides shall be approved by the Landscape Architect prior to use. Use in accordance with the specifications of the prevailing Public Health Authority.
 - 4. Provide temporary protection fences and barriers where deemed necessary and all other work incidental to proper maintenance. Provide "Please Stay Off The Grass" signs. Remove temporary protection devices at the completion of maintenance period. Protect planting areas and plants at all times against trespassing and damage of all kinds for duration of maintenance period. If any plants become damaged or injured, treat or replace them as directed by Landscape Architect at no additional cost to Owner.
 - 5. In seeded areas, keep soil moist during germination period. After germination for seeded areas supplement natural rainfall to produce a total of 2 inches per week. Water lawns not less than twice per week until acceptance. Apply water during the heat of the day.
 - 6. Do not attempt first mowing until seeded areas reach 2-1/2 inches in height. Do not remove more than 40% of the grass leaf in initial or subsequent mowings. Maintain grass at 2 inches in height. Remove grass clippings. Provide at least 3 mowings before acceptance.
 - 7. Reseed areas greater than one foot square which fail to show a uniform stand of grass. To be acceptable, a stand of grass shall have a uniform count of at least 100 plants per square foot.

8. Perform cleaning during the installation of work and upon completion of the work. Remove all excess materials, debris, and equipment from site. Repair any damage to adjacent materials and surfaces resulting from installation of this work.

3.06 INSPECTION AND ACCEPTANCE

- A. At the end of the maintenance and protection period, submit a written request to Landscape Architect to inspect all work for acceptance at least 14 calendar days before anticipated date of inspection.
- B. Repair and replace any lawn area that is defective or becomes damaged at no additional cost until this portion of the work is finally accepted, when, in the judgment of the Landscape Architect, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications.
- C. Upon acceptance of the work, the Contractor will be relieved of further responsibility for care and maintenance of accepted areas. The Owner will be responsible for maintenance of new lawns upon acceptance of the work.

END OF SECTION

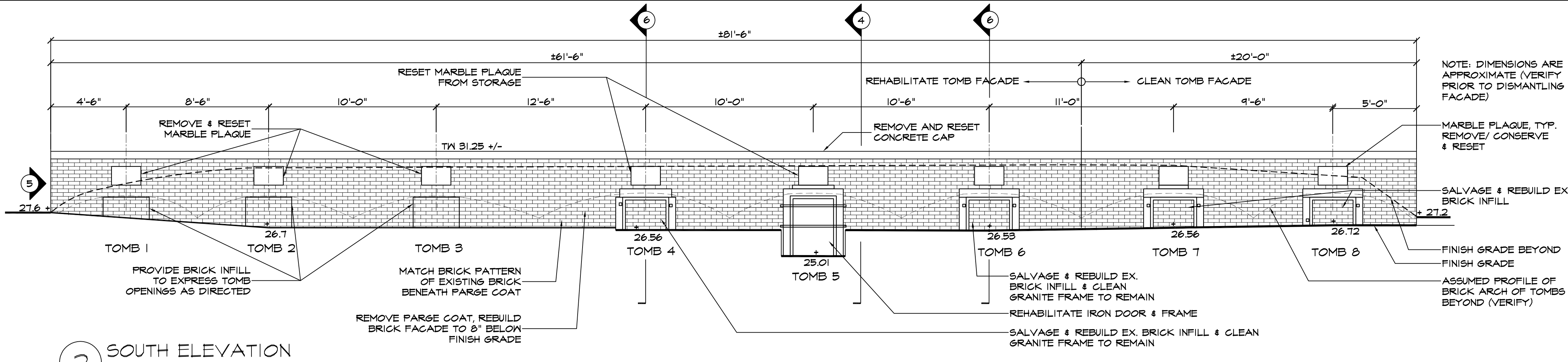
SURVEY NOTES

- 1.) BENCHMARK: INVERT OF SANITARY SEWER MANHOLE IN THE SIDEWALK ON SOUTH SIDE OF SOMERVILLE AVENUE, APPROXIMATELY 540' WEST OF CHURCH STREET. ELEVATION=12.15' (SOMERVILLE BASE)
- 2.) ONLY SURFACE UTILITY INDICATIONS ARE SHOWN. THE VARIOUS UTILITY COMPANIES WERE NOT CONTACTED AS PART OF THE WORK SCOPE.
- 3.) THE INFORMATION CONTAINED ON THE DISK OR ELECTRONIC DRAWING FILE ACCOMPANYING THIS FILE ACCOMPANYING THIS PLAN MUST BE COMPARED TO THE SEALED AND SIGNED HARD COPY OF THE PLAN TO ENSURE THE ACCURACY OF ALL INFORMATION AND TO ENSURE NO CHANGES, ALTERATIONS, OR MODIFICATIONS HAVE BEEN MADE. RELIANCE SHALL NOT BE MADE ON A DOCUMENT TRANSMITTED BY COMPUTER OR OTHER ELECTRONIC MEANS UNLESS FIRST COMPARED TO THE ORIGINAL SEALED DOCUMENT ISSUED AT THE TIME OF THE SURVEY. AT THE TIME OF THE SURVEY.
- DUE TO THE CRITICAL NATURE OF SURVEYING, DATA ACQUISITION, AND AUTOCAD PLAN DEVELOPMENT, IF CRITICAL DIMENSIONAL INFORMATION IS NEEDED AND IS NOT SPECIFICALLY SHOWN ON THE ELECTRONIC DRAWING FILE, PLEASE CONTACT JNEI.
- 4.) MANY OF THE GRAVE MARKERS ARE BROKEN AND IT IS DIFFICULT TO DISCERN WHETHER THERE ARE MULTIPLE GRAVES OR IF A SINGLE HEADSTONE HAS BEEN BROKEN INTO SEVERAL PIECES AND PLACED NEXT TO EACH OTHER.
- 5.) SURVEY PROVIDED BY JUDITH NITSCH ENGINEERING DATED APRIL 12, 2002.

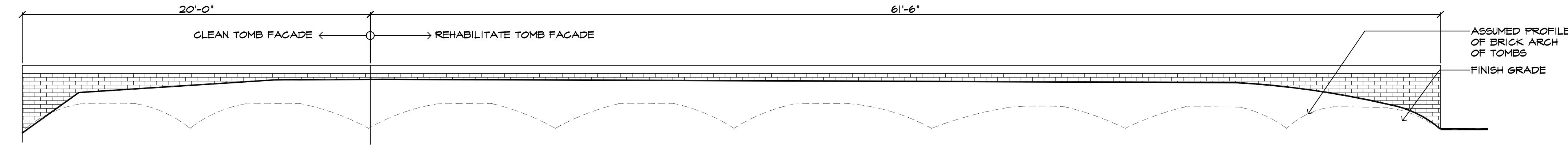
PLAN REFERENCES:
LAND COURT PLAN 839C
BOOK 6076, END (LOCUS)
BOOK 5974, PAGE 251

DEED REFERENCE:
BOOK 179, PAGE 242 (LOCUS)

CITY ENGINEERING DEPARTMENT:
FIELD NOTES-BOOK 36A, PAGES 121-129



2 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



3 NORTH ELEVATION
SCALE: 1/4" = 1'-0"

LEGEND

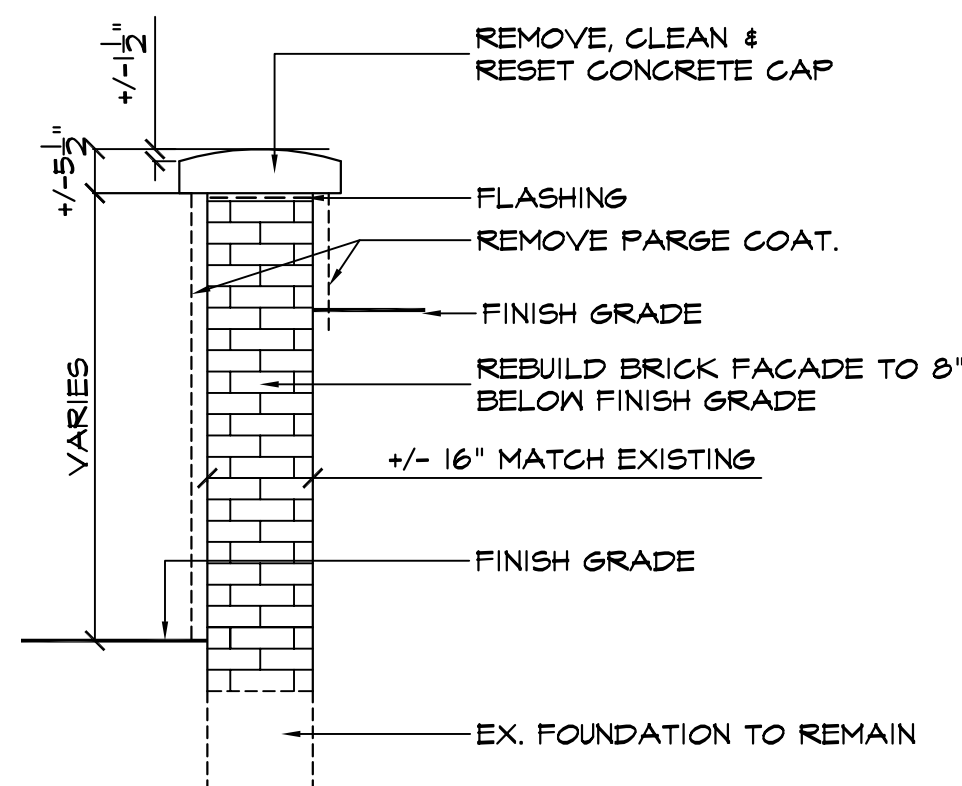
--- APPROXIMATE LIMIT OF WORK

4 DETAIL NO. ELEVATION
SHEET NO.

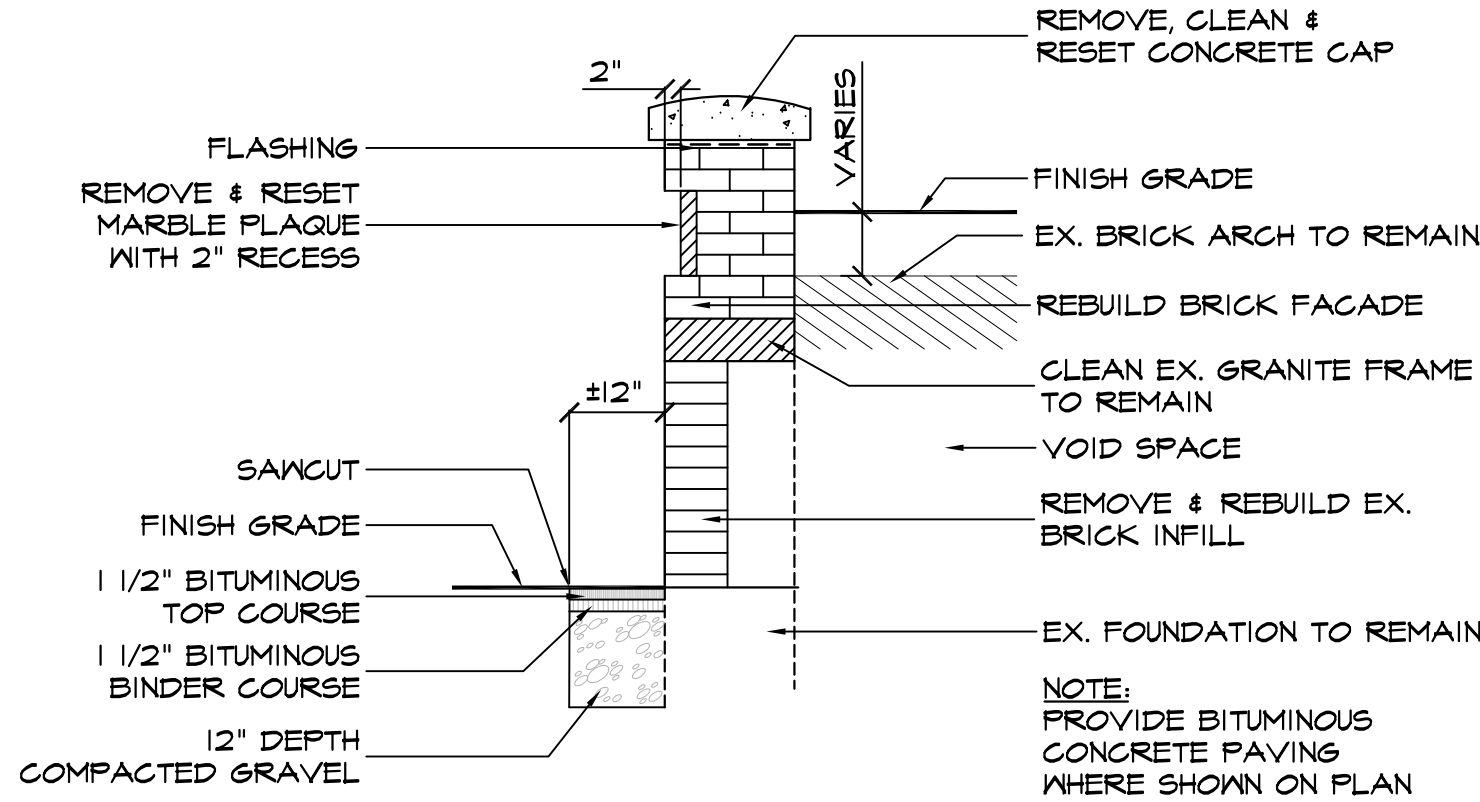
6 DETAIL NO. SECTION
SHEET NO.

SURVEY LEGEND

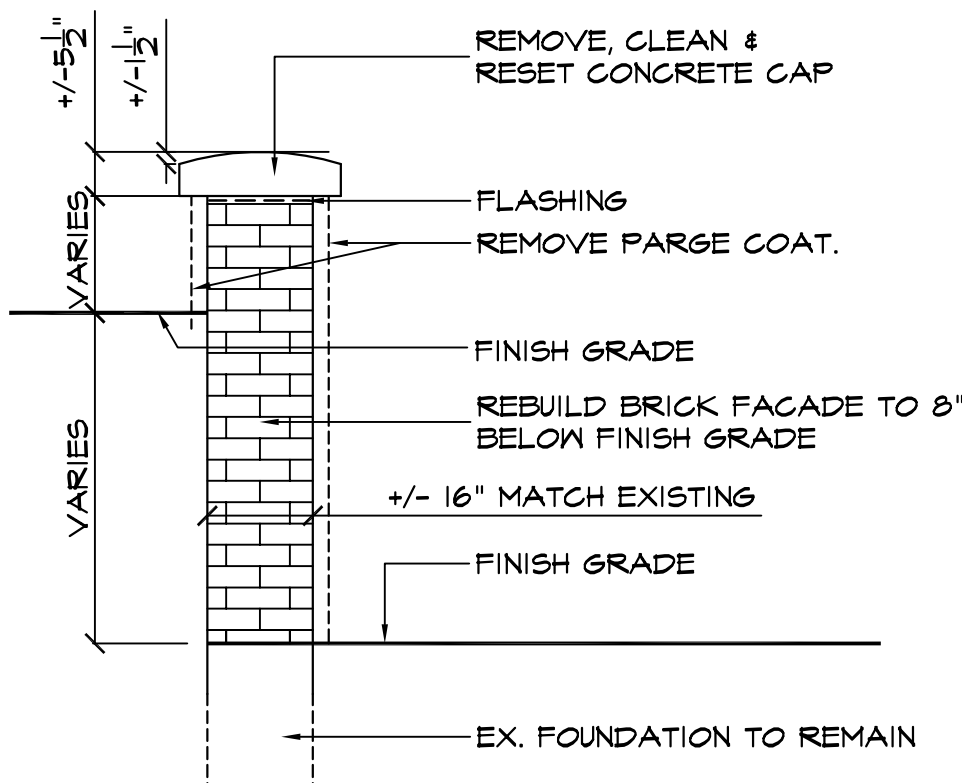
- FP FLAGPOLE
- VPP VENT PIPE
- DI=25.02 DECIDUOUS TREE WITH TRUNK DI.
- BUSH
- WM WATER METER
- FB FIRE ALARM BOX
- LIGHT POLE
- SIGN
- DI=25.02 DROP INLET WITH ELEVATION
- SEWER MANHOLE
- WATER MANHOLE
- CONCRETE PAD
- MARKER 8" SQUARE GRANITE
- UTILITY POLE
- CONIFEROUS TREE WITH TRUNK D
- R=26.57 RIM ELEVATION
- MANHOLE (TYPE UNKNOWN)
- OVERHEAD WIRE
- HEADSTONE/GRAVE MARKER



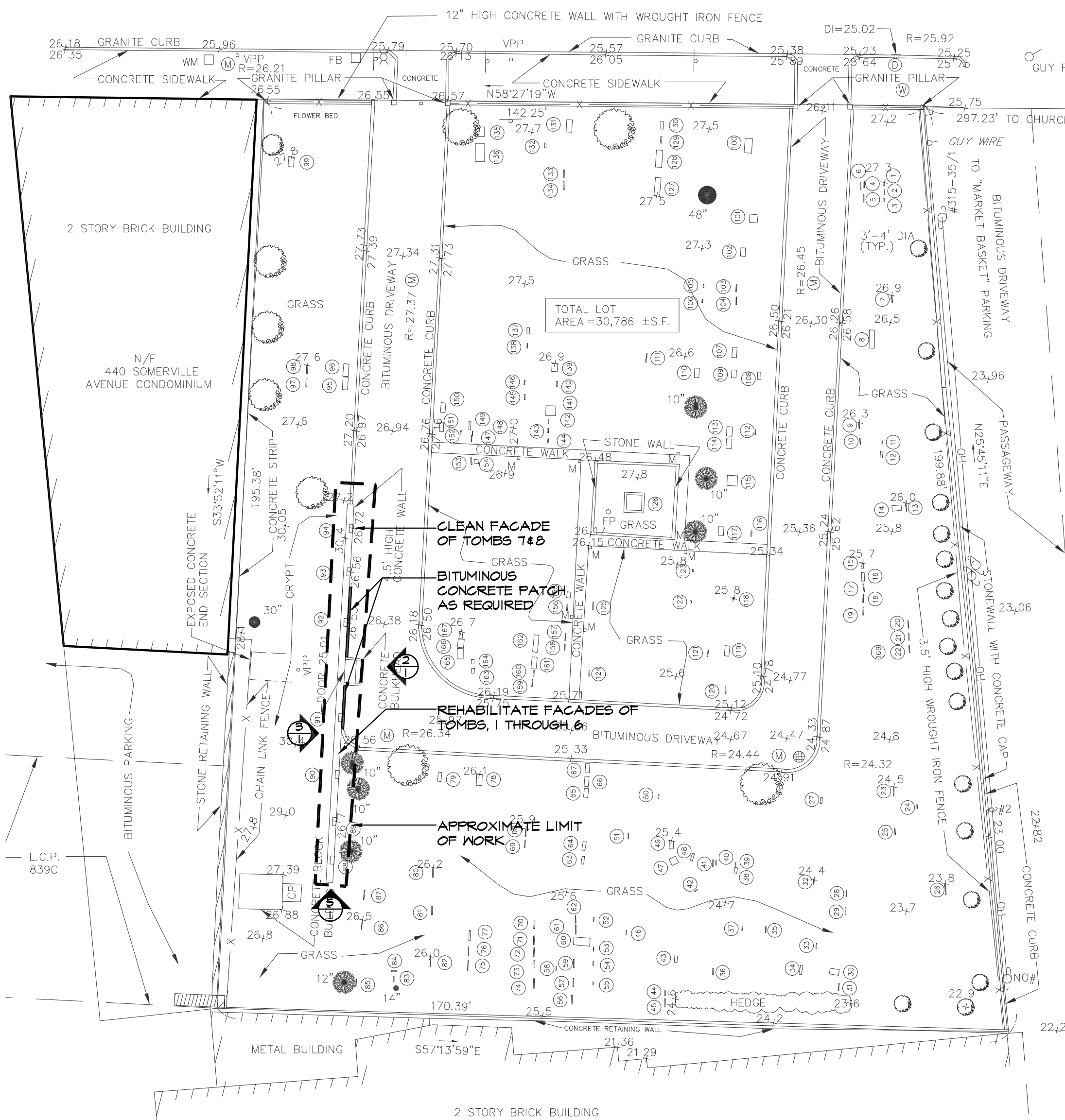
4 TYPICAL WALL SECTION
@ TOMB FACADE
SCALE: 1/2" = 1'-0"



6 TYPICAL WALL SECTION
@ OPENING IN TOMB FACADE
SCALE: 1/2" = 1'-0"



5 WEST END ELEVATION
SCALE: 1/2" = 1'-0"



1 SITE PLAN
SCALE: 1" = 20'-0"

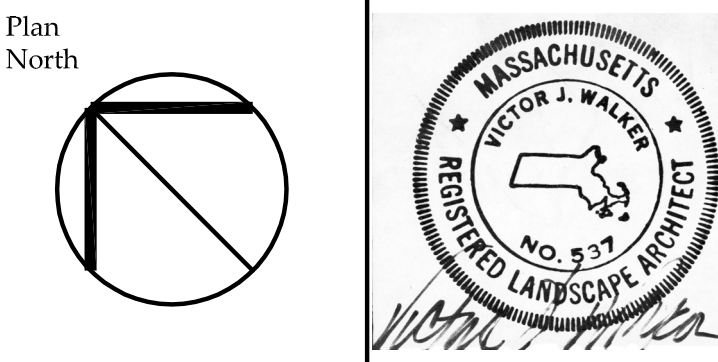
WALKER - KLUESING DESIGN GROUP
711 KETCH DRIVE, NAPLES ON THE GULF, FLORIDA 34103 (239) 240-0000
LANDSCAPE ARCHITECTURE · SITE PLANNING · URBAN DESIGN

BUILDING & MONUMENT CONSERVATION
83 SCHOOL STREET, ARLINGTON MA 02476 (781) 641-1603

SCULPTURE & DECORATING ARTS
CONSERVATION SERVICES, LLC
JOY STREET STUDIOS, #18, SOMERVILLE MA 02143 (617) 331-7726

- NOTES:
- SCHEDULE WORK & COORDINATE TO FACILITATE INSPECTION OF INTERIORS OF ALL TOMBS IN ONE DAY.
 - DO NOT DISTURB REMAINS IN TOMBS. PROVIDE PROTECTION.

Date Revisions: No. Description By



Client:
Somerville Historic Preservation Commission
City Hall, 93 Highland Ave., Somerville MA 02143

Project:
MILK ROW CEMETERY
TOMB FACADE
REHABILITATION
Somerville, Massachusetts

Sheet Title:
SITE PLAN PLAN &
DETAILS

Project No: 580
Date: 18 FEBRUARY 2016
Scale: AS SHOWN
Drawn By: RD, PV
Checked By: VW

Sheet Number:
1