



# City of Cambridge

## Purchasing Department

Cynthia H. Griffin  
*Purchasing Agent*

TO: ALL BIDDERS

FROM: CITY OF CAMBRIDGE

DATE: APRIL 1, 2010

RE: CAMBRIDGE CEMETERY STAIRCASE RESTORATION PROJECT  
2010 – FILE NO. 5179

---

Please note the attached Supplemental Conditions and Special Conditions that was inadvertently omitted from the original Bid Package.

All other particulars remain unchanged.

  
\_\_\_\_\_  
CYNTHIA H. GRIFFIN  
PURCHASING AGENT

ADDENDUM NO. 1



## SUPPLEMENTAL CONDITIONS

### 1. PROPOSED PROJECT LOCATIONS

Various locations as directed by the Engineer and/or Owner.

### 2. SPECIFICATIONS AND DETAILS

It is of utmost importance that the Contractor thoroughly understand the contract documents and specifications in their entirety and that this knowledge is shared with all staff and Subcontractors.

### 3. COORDINATION

The Contractor shall designate a contact person and furnish relevant telephone numbers for use by the Cambridge Department of Public Works during work hours and during job related emergencies throughout the duration of the contract. In case of an emergency contact after work hours, the Contractor shall respond within one hour to (617) 349.4860/4862 and shall be present, if necessary, at the job-site within three hours of initial contact.

The Contractor shall have a working foreperson on the job site at all times during construction.

The Contractor shall supply (1) one Motorola Nextel I-60C cell phone to the City of Cambridge Resident Engineer. This cell phone shall be kept in service for the duration of the contract. Upon the completion of the contract, the cell phone will be returned to the Contractor.

Names of the Contractor's contact people shall be given to the City prior to start of construction.

### 4. WORK HOURS

Work hours shall be 7:00 a.m. through 3:30 p.m. Monday through Friday only, except on Critical Roadways. No weekend or holiday work shall be allowed except during emergencies.

A list of the City holidays will be supplied by the Owner upon the awarding of the contract

Normal working hours will be further restricted on Critical Roadways. Critical Roadways, as deemed by the Owner, are roadways that are essential for the safe and efficient movement of traffic during the morning and evening peak hours. **No construction shall commence until 9:00 AM and no construction shall continue past 3:30 PM on these roadways unless otherwise approved by the Owner and/or Engineer.** A list of Critical Roadways will be supplied by the owner upon request.

### 5. TRAFFIC CONTROL

This section specifies maintenance and protection of vehicular and pedestrian traffic during construction and other safety control devices and requirements for the protection of the traveling public and working personnel during construction and related operations, as approved by the Owner.

The Contractor must provide barrels, (detour) signs, flashers, channeling devices, lights, and arrow boards. The design, application, and installation of all devices required by this section shall conform to the requirements of the Manual on Uniform Traffic Control Devices (MUTCD) and Part VI of the Manual on Uniform Traffic Control Devices, published by U.S. DOT, latest edition, Americans with Disabilities Act (ADA), and the Commonwealth of Massachusetts, Highway

Cambridge Cemetery Staircase Restorations

Department (MHD), Standard Specifications for Highways and Bridges, latest edition except as modified herein. **All traffic signs provided by the Contractor must be gender-neutral.**

Traffic Management Plan: Before starting any work under this Contract, the Contractor shall prepare a plan that indicates the traffic routing proposed by the Contractor during the various stages and time periods of the work, and the temporary pedestrian and construction facilities, temporary barricades, gender neutral signs, drums, and other traffic control devices to be employed during each stage and time period of the work, to maintain traffic and cyclist and pedestrian access to abutting properties. Particular care shall be taken to establish and maintain methods and procedures that will not create unnecessary or unusual hazards to public safety. Traffic control devices required only during working hour operations shall be removed at the end of each working day. The Contractor shall submit the aforementioned Traffic Management Plan for approval by the Owner. Implementation shall begin only after the plan has been reviewed and approved by the Owner.

#### TRAFFIC CONTROL REQUIREMENTS

The Contractor shall meet the following conditions, unless otherwise specifically approved by the Owner and/or Engineer:

1. All work shall be prosecuted with proper regard for the convenience of the public and in a manner to permit unimpeded traffic flow whenever possible. The interruption of traffic will not be permitted unless specifically allowed by the Owner and/or Engineer and in accordance with the requirements of the Owner and in conformance with MUTCD requirements.
2. The Contractor shall be responsible for necessary coordination with the City departments affected by the project
3. Traffic control devices and signs shall be removed, dismantled or properly covered for those periods of the day when not in use.
4. The DPW shall be notified of any re-routing of traffic. Approval must be obtained from the Owner prior to any re-routing of traffic (except emergencies).
5. The Contractor shall coordinate the work with the schedules of City Rubbish & Recycling Collection trucks so as not to impede access to the adjacent stores and property owners and shall cooperate with delivery personnel to facilitate deliveries to properties within the work zone.
6. No operations shall be conducted, including the loading or unloading of vehicles, on or near the traveled lanes or road shoulders without first erecting warning signs and channelizing devices as directed. These precautions shall be maintained at all times while work is in progress.
7. Construction signs and channelizing devices shall be used to separate traffic from the work areas and for traffic control. Placement other than as shown in the plans or the MUTCD will require prior approval.
8. Temporary signs and channeling devices shall not be set up until there is adequate visibility or appropriate construction lighting. The Contractor shall schedule his/her work so that temporary signs and channeling devices are removed and traffic is returned to its normal pattern before the end of the work period.

Cambridge Cemetery Staircase Restorations

00825-2

9. Work requiring overnight lane closures shall not begin until all materials required for the completion of each night's work are delivered or available to the project site, unless otherwise approved by the Owner and/or Engineer.
10. Access to residences and businesses shall be maintained at all times.
11. Work operations shall not be performed on the roadway in such a manner that traffic is obstructed or endangered simultaneously from both sides of the roadway.
12. The Contractor shall keep all roadway areas open to traffic as clear as possible at all times. Materials shall not be stored on any roadway area or within 4 feet of the traveled way. Material shall be delivered to the installation areas as they are needed to provide a continuous installation. Location of storage areas shall be subject to approval.
13. The Contractor shall remove all equipment and construction vehicles from the traveled way and shoulders open to traffic during non-work hours. Vehicles shall be parked in pre-approved areas no closer than four feet from the traveled way in unless specifically permitted.
14. The Contractor shall furnish 60-inch x 30-inch approved signs reading "CONSTRUCTION VEHICLE - DO NOT FOLLOW" to be used on trucks hauling to the project, when such signs are deemed necessary by the Owner and/or Engineer. The color, type of sheeting and size of lettering shall conform to that of the permanent construction signs.
15. Temporary signs and channeling devices shall not be set up in inclement weather.

#### PEDESTRIAN TRAFFIC

1. Sidewalks shall be maintained at all times through the construction periods. Temporary sidewalks, pedestrian detours and pedestrian and construction facilities shall be constructed as needed to maintain pedestrian traffic and business access, as shown on the plans or as ordered.
2. Pedestrian access will be provided to abutting land users at all times, as approved by the Owner and in accordance with MUTCD and ADA requirements.
3. Unobstructed walkways of 4 feet minimum width, unless otherwise approved by the Owner, will be provided at all times.
4. Temporary pedestrian walkways shall be separated from roadway and construction areas by barricades as approved by the Owner.

#### DETOURS

1. If approved by the Owner and/or Engineer, construct and maintain detours around the work to maintain traffic over any construction work in a public street, road, or highway where traffic cannot be maintained on alignment of original roadbed or pavement
2. When detours are allowed, the Contractor shall provide all detour signs approved

Cambridge Cemetery Staircase Restorations

by the Owner and/or Engineer with directional arrows. Signs shall be placed at all streets and intersections to provide required direction to allow motorists to return to the street location beyond the detour. The Contractor must submit a written detour plan for the Owner and/or Engineer's approval prior to implementation of the detour.

3. The Contractor is responsible for the notification of any parties affected by the detour, including, but not limited to Cambridge Fire Alarm, Cambridge Police, State Police, MBTA, MDC, Cambridge Traffic Department, and abutting property owners.

#### SPECIAL REQUIREMENTS

1. The Contractor shall provide necessary access for fire apparatus and other emergency vehicles through the work zones to abutting properties at all times.
2. Open excavations adjacent to the traveled way or shoulders shall not remain open through non-work hours unless adequately protected by barricades or barriers and specifically authorized by the Owner.
3. At least one serviceable driveway and sidewalk access to all residences and businesses within the project shall be maintained at all times.
4. The Contractor shall not allow unnecessary idling of trucks and/or equipment throughout the entire project area. The City of Cambridge prohibits idling of trucks and equipment for periods of time exceeding five (5) minutes when not in use.

#### 6. POLICE DETAILS

Scheduling Police Details shall be the responsibility of the Contractor. A Police Detail is to be present during all construction activity. To schedule a detail officer, call (617) 349-3350.

The Cambridge Police Department requires 24-hour advance notice to obtain a Police Detail, except in emergencies and 4-hour advance notice to cancel a detail.

The Contractor must submit all signed detail forms to the project managers or engineer, so that Public Works can pay all submitted and approved Police detail invoices. Any invoices that are not approved will be the responsibility of the contractor to pay.

The City of Cambridge Police Department shall bill the City of Cambridge Department of Public Works or whatever department has oversight of the contract for the services of uniformed police officers provided by the Police department

The Contractor will be required to reimburse Public Works or whatever department has oversight of the contract for Police Details, if the Contractor fails to show for the job or if the Contractor fails to cancel the detail with adequate advance notice.

#### 7. VIDEOTAPING PRIOR TO CONSTRUCTION

It shall be the Contractor's responsibility to videotape the entire area of construction in advance of the start of work. It is of utmost importance to show the street line as well as all private and public property defects to minimize any claims of private property damage. It shall be the Contractor's

Cambridge Cemetery Staircase Restorations

responsibility to prove that such a defect existed prior to the start of the work. If the Contractor cannot prove damage to be a pre-existing condition, the necessary repairs shall be made at the expense of the Contractor.

A copy of the videotape must be conveyed to the Owner and/or Engineer in advance of the start of work.

#### **8. PERMITS**

It shall be the responsibility of the Contractor to apply for and receive all necessary permits before the start of work at each location. A copy of the permit **must be on the job site at all times** for inspection (except for emergency repair work). Failure to have the permit available may result in suspension of the rights granted by the permit.

#### **9. POSTING OF TEMPORARY SIGNS: "EMERGENCY, NO PARKING"**

Only authorized City of Cambridge "Emergency, No Parking" signs shall be allowed. Signs are available at the Public Works Department.

The Contractor shall pick up the authorized City signs from the Public Works Department after receipt of the appropriate permits. The Contractor shall fill in the date, time and reason where indicated on the sign with a permanent waterproof black marker.

It shall be the responsibility of the Contractor to post an adequate number of signs at the appropriate construction locations at least twenty-four (24) hours prior to needing access to the parking area.

When the signs have been posted, the Contractor shall notify the Traffic & Parking Office at (617) 349-4724 and specify the streets that have been posted. The Traffic & Parking Office will log the information.

Towing will only be allowed at verified locations after all of the above procedures have been followed.

Signs shall only be posted for the date and time that actual construction will take place. No signs shall be posted for more than five working days. Signs shall be removed immediately following completion of construction.

#### **10. CATCH BASIN AND MANHOLE PROTECTION**

The Contractor shall identify all sewer manholes, storm drain manholes and storm drain catch basins within the proposed construction limits. The Contractor must then take all reasonable precautions to protect these structures during construction.

Filter fabric, or approved equal must be placed under catch basin grates to prevent infiltration of unsuitable material. Should infiltration of unsuitable material take place, the Contractor shall be responsible for the cleaning of the structure, disposal of material, and a final TV inspection at no cost to the City.

#### **11. USE OF CITY HYDRANT**

In accordance with rules and regulations of the Massachusetts Department of Environmental Protection and the City of Cambridge Water Department, the Contractor is required to provide a backflow preventer and to obtain a permit from the Water Department at (617) 349.4770 before using any hydrant within the City.

Cambridge Cemetery Staircase Restorations

The City will shut down any jobs violating this provision.

## 12. TREE PROTECTION DURING CONSTRUCTION

During all construction projects the utmost care shall be taken by the contractor to avoid unauthorized, unnecessary or improper wounding of public or private shade trees. Prior to construction the contractor shall provide a tree protection plan and work schedule. A Massachusetts or International Certified Arborist shall be sub-contracted by the contractor to provide a protection plan and perform specified work. All plans and schedules shall be subject to review and approval by the City Arborist. Infraction of Massachusetts State Law Chapter 87 or failure to provide a protection plan and work schedule will result in fines or the immediate cancellation of the contract.

Pre-construction tree protection measures shall include the following:

- a. Wrapping the trunks of trees of a diameter at breast height (dbh) of 6" or greater with a durable material such as two by four lumber sufficient to protect tree trunks from mechanical damage. Removal of protective wrapping shall be done by the contractor after construction is complete.
- b. The proper pruning (raise pruning) of low branches to a height no greater than fourteen feet above the roadway and eight feet above the sidewalk. This includes trees endangered by traffic re-routing as the result of construction operations.
- c. Tunneling shall be the preferred method of excavation adjacent to tree roots to avoid root pruning. If root pruning is unavoidable certified personnel shall execute the operation with sufficiently sharpened hand tools and in such a fashion as to have minimum negative impact on tree health and safety.
- d. Trucks and heavy equipment shall not pass over or park on roots of public shade trees. A protection zone shall be established by erecting a ridged fence outside the perimeter of the dripline of the tree. For occasional or one time access over roots 1/2" plywood, overlapped may be used. Permeable materials such as gravel or wood chips shall be placed over root systems of trees which are not covered by hardscape and over which trucks and heavy equipment must travel during construction operations, when such travel is unavoidable, to prevent soil compaction and root damage. Material shall be replaced as needed.
- e. All tree protection measures and operations shall be subject to review, approval or change by the City Arborist.

### Protection of Graves

The Contractor shall install temporary materials and structures as required to fully protect existing graves and headstones adjacent to the work area. Graves and headstones within five feet of the staircase shall be protected as follows:

- a. Wrap headstones with a durable material such as two by four lumber sufficient to protect stones from mechanical damage. Remove protective wrapping after construction is completed.
- b. Cover grass with plywood or other durable board material to protect the grass and  
Cambridge Cemetery Staircase Restorations

Soil above graves from mechanical damage. Remove boards after construction is Complete.

**13. WATER LINES**

Any damage done to City water lines, hydrants, structures or private services will be repaired in accordance with the Cambridge Water Department specifications. If a City Representative determines the damages occurred due to Contractor negligence, such as tapping a service or a water main with a backhoe or operating a hydrant incorrectly, the contractor shall repair the damage at no additional expense to the City.

**14. JOB-SITE SAFETY**

All construction activity shall conform to the latest OSHA standards and other applicable safety standards.

At all times during the course of the work and especially after hours and on weekends, the Contractor shall adequately secure the site to the satisfaction of the Owner and/or engineer. No debris, materials, vehicles, equipment, etc. shall be left or stored on the job site overnight unless approved by the owner and/or Engineer. Any equipment or material permitted to be stored on-site shall be properly secured and located outside pedestrian or vehicular travel lanes.

**15. RODENT CONTROL**

The Contractor shall be required to provide the services of a Massachusetts state licensed experienced rodent control person whose duties shall be to identify rodent activity or infestation resulting from the construction activity under this contract and to take approved and professionally acceptable remedial action, including baiting, elimination of sources of harborage and making recommendations that may be necessary in controlling and/or eliminating rodent activity. The licensed person shall maintain a close liaison with the Owner and/or Engineer for the duration of construction. The rodent control person employed by the Contractor shall keep careful records of his/her activity; these shall be transmitted through the Contractor to the Owner and/or Engineer.

**16. PROGRESS MEETINGS**

The Contractor shall be available for all meetings required by the Owner and/or Engineer to coordinate the successful completion of the Contract. The Contractor must attend the Department of Public Works (DPW) weekly construction meetings every Monday at 900 A.M. at DPW offices or as rescheduled by the City Engineer. The Contractor's representative at this meeting must be intimately familiar with the contract work and be capable of answering detailed questions regarding the contract work.

**17. UTILITY COORDINATION**

The Contractor shall contact Dig Safe to mark out all utilities in the area of the proposed work. It shall be the Contractor's responsibility to contact utility companies that may have conflicts with the proposed work and arrange for assistance prior to excavation.

It shall be the Contractor's responsibility to obtain locations for all types of utility structures within the area to be affected by the work and to protect them from being covered by the placement of roadway or sidewalk surfacing materials.

Utility structures not correctly adjusted to the proper grade prior to paving or sidewalk installation or buried during the construction shall be uncovered, repaired if necessary, and re-graded at the Contractor's expense.

**18. QUANTITIES AND LOCATIONS**

All quantities are approximate, and the City reserves the right to increase or decrease quantities and change limits or locations.

**19. WARRANTY OF WORK**

All finished work shall be covered by a one-year warranty from any defects in quality, with the exception of permanent street restoration, which shall be warranted for two (2) years. If, at any time within one year after the completion of the contract, any defective work should appear, which in the opinion of the City is due to inferior materials or workmanship, the City will notify the Contractor in writing of the defects and repairs to be made. The Contractor shall begin the repairs within a mutually agreed time frame and shall do whatever is necessary to remedy the defects without cost to the City.

Warranty dates shall begin upon the presentation of written acceptance of a given location by the Owner and/or Engineer to the Contractor

**20. LAWS AND REGULATIONS**

The bidder's attention is directed to the following list which enumerates the jurisdictions applicable to this job under Section 15 of the Instructions to Bidders, p. 100-3, entitled Laws and Regulations:

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ASTM	American Society of Testing Materials
DOT	Department of Transportation (Federal)
EOTC	Executive Office of Transportation and Construction (Comm. of Massachusetts)
MUTCD	Manual of Uniform Traffic Control Devices
MHD	Massachusetts Highway Department

**21. MASSACHUSETTS GENERAL LAWS**

The following specific sections of the Massachusetts General Laws (MGL) are hereby incorporated

into this Contract:

Ch. 30 §39F (§§ a - h)	Ch. 30 §39L	Ch. 30 §39P	Ch. 149 §34
Ch. 30 §39I	Ch. 30 §39M	Ch. 30 §39Q	
Ch. 30 §39J	Ch. 30 §39N	Ch. 30 §39R	
Ch. 30 §39K	Ch. 30 §39O	Ch. 82 §40	

Cambridge Cemetery Staircase Restorations

DIVISION 1 GENERAL REQUIREMENTS  
SECTION 1A SPECIAL CONDITIONS

1A.01                    GENERAL REQUIREMENTS

- A. The Owner-Contractor Agreement, General Conditions, Supplementary General Conditions, Section 1A Special Conditions, and all Addenda items modifying any of the above documents or this Section shall be considered a part of this Section and be as binding as if written herein.
- B. Review all other Contract Documents for requirements and/or conditions affecting or relating to work described in this Section.

1A.02                    PROJECT SITE

The Project Site is the Cambridge Cemetery at 76 Coolidge Avenue in Cambridge, Massachusetts

1A.03                    SUMMARY OF WORK

The work consists of restoring masonry staircases.

1A.04                    COORDINATION

- A. Coordinate all construction and related activities, including provision of all necessary facilities to all trades, to maintain orderly and continuous project progress.
- B. Keep fully informed on all matters pertaining to other con-

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

tracts, activities, and conditions which might affect this work.

- C. Be responsible for all costs resulting from defective or ill-timed work.

1A.05

INFORMATION

- A. Keep fully informed as to size, shape, number and position of all openings and special accommodations required for all trades, and in the absence of special drawings or directions, provide such openings and accommodations.
- B. Furnish complete information to all Subcontractors relative to work for which they are responsible.
- C. If in doubt about method of installation of any item or material, including work of Subcontractors, ask Architect to resolve. Make good any work improperly executed for which a request could have been made.
- D. Correct any work done in such a manner as to prevent proper execution of work of Subcontractors or other.

1A.06

MEASUREMENTS

Before ordering any material or performing any work, verify all measurements and be responsible for correctness. No extra payment will be allowed on account of differences between actual dimensions and dimensions on Drawings. Notify Architect of discrepancies immediately.

1A.07

DEFINITIONS

- A. Singular Number: Whenever any item is referred to in a singular number, provide as many as necessary to complete work.
- B. Provide, provided: The words "provide" and "provided" shall mean that the Contractor shall furnish and install the item(s) referred to.
- C. N.I.C.: The abbreviation "N.I.C." means that the work referred to is not a part of this Contract.

1A.08

"OR EQUAL" CLAUSE

- A. "Equal" or "Approved Equal" shall mean that the Contractor may propose to substitute another product for that named, provided that the Architect is notified of the proposed substitution sufficiently in advance of the time at which it is to be ordered or incorporated into the work to permit proper evaluation. The names of manufacturers in the Construction Documents are used to set a standard of quality and to provide a source of supply, and shall not be considered restrictive as to competitive bidding.
- B. The cost of any testing or other expenses which the Architect considers necessary in evaluating a proposed substitution shall be paid by the Contractor.
- C. Substitution of products or processes other than those specified shall be done only upon written authorization from the

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

Architect. Appearance as well as quality may be considered in the Architect's evaluation.

1A.09

SUBSTITUTION

- A. After execution of the Contract, substitutions will be considered for the following reasons only:  
That the products are equal to or superior to products specified in durability, efficiency, utility, and appearance; and that the specified products cannot be delivered by the time they must be incorporated in the work due to circumstances beyond the Contractor's control, or that products will reduce Contract cost without sacrificing quality.
- B. To receive consideration, requests for substitutions shall be accompanied by complete descriptive information, and documentation of delivery times and differences in prices from specified products.
- C. The Contract Price shall be adjusted to reflect any difference in price between the specified item and the proposed substitute.
- D. In the event that a substitution makes other changes necessary, the Contractor shall be responsible for the costs of such changes. It shall be the Contractor's responsibility to verify that substituted items will fit into the construction as indicated for the specified items.

1A.10

ERRORS, OMISSIONS, CONFLICTS, DISCREPANCIES, AND  
INTENT OF CONSTRUCTION DOCUMENTS

- A. If errors, omissions, conflicts, discrepancies, or other problems in the Construction Documents are noticed, the Architect shall be not-

00900-04

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

ified immediately; and affected work shall proceed only with the Architect's written permission.

- B. All work shown on Drawings or referred to in Specifications shall be included. Where conflicts or discrepancies occur within or between documents, the Contract work shall include better quality or greater quantity.
- C. Although Drawings are generally to scale as indicated, measuring of Drawings shall not be used to determine sizes, spacings, or locations. If dimensions are not shown, request same from Architect or measure on site.
- D. The Specifications are divided into Sections for convenience of reference. Such divisions shall not operate to make the Architect an arbitrator in establishing subcontract limits between Contractor and his subcontractors or between subcontractors; nor shall they relieve the Contractor of his responsibility to provide all work indicated, or necessary for completeness. Any work which is not included in the "Scope" paragraphs of the individual sections shall be provided by the General Contractor.
- E. Any claim by a Contractor or Subcontractor that they, in submitting their respective bid proposals, did not include all items indicated in the Construction Documents will be given no consideration. If any item is specified in a Section in which the item might not normally be specified it shall be the General Contractor's responsibility to coordinate the work, and to provide the item directly or through a Subcontractor. If any item is specified in more than one Section, it shall be the Contractor's responsibility to assign it.

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

- F. Contractor or Bidder shall, before submitting his proposal or bid, inform himself fully of scopes of work included in proposals or bids of subcontractors or sub-bidders; and shall determine their needs for facilities and accommodations such as scaffolding, hoists, rigging, chases, sleeves, cutting and patching, temporary enclosures, etc. Any of these facilities and accommodations which are not included in proposals or bids from subcontractors shall be provided by the General Contractor.

1A.11                    INSTALLATION AND MAINTENANCE REQUIREMENTS

Provide for support, and adequate installation and maintenance clearances for all fixtures, equipment, accessories, and controls. Provide access panels for same when concealed within structure.

1A.12                    CUTTING AND PATCHING

Cut and patch existing construction as required for performance of Contract work. Refinish finish materials which are cut and patched to match original existing finish.

1A.13                    REMOVAL AND REPLACEMENT

Remove existing construction as required to accommodate Contract work, and replace after completion of work. Modify if necessary for proper fit and integration with new work as required. Repair or replace any material damaged to Architect's satisfaction.

1A.14                    SURFACE PREPARATION

Clean all surfaces over which a finish material is to be applied, and make

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

sound and ready to receive new material.

1A.15                    LINES, LEVELS, AND GRADES

- A. Be responsible for locations of all work, and verify all lines, levels, grades and dimensions.
- B. In cases where existing construction to which new construction must relate is out of line, level or plumb, confer with Architect to resolve relationship before proceeding.

1A.16                    REMOVED MATERIAL

Dispose of all material removed from existing construction off site in a legal manner; except that Owner may claim any material which he considers useful.

1A.17                    HAZARDOUS WASTE

- A. Control all hazardous waste materials at the point of their removal, and place into appropriate containers.
- B. Comply with State of Massachusetts Department of Environmental Quality Regulation 310 CMR 30.0 and all other applicable codes and regulations in handling, storing, transporting and disposal of all hazardous materials. Deliver documentary proof to Owner that all mandated procedures were followed.

1A.18                    TEMPORARY FACILITIES

- A. Toilets: Designated facilities on site may be used if kept clean.

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

- B. Telephone: Provide telephone service.
- C. Water: Obtain from existing system. Provide hoses, and control use to minimize waste.
- D. Electric Power: Provide electrical power if needed.

1A.19                      NOISE AND POLLUTION CONTROL

- A. Comply with requirements of Chapter 11, Section 31C and Section 142D of Massachusetts General Laws, and Rules and Regulations adopted thereto by the Massachusetts Department of Public Health.
- B. Control noise, dust, fumes, dirt and spray to the maximum reasonable extent. Radio playing not permitted.

1A.20                      USE OF PREMISES AND SITE

- A. The site will be occupied by maintenance forces, and occasionally by funeral processions. It will be expected that these occupations and events will be accommodated by the Contractor.
- B. Keep lawns, walks, and driveways free of debris at all times, and clean daily.

1A.21                      SIGNS

No signs of any kind will be permitted on the Project except for danger, warning, and direction signs. This shall include "bumper sticker" type signs posted on construction trailers or any other surface.

1A.22                    PARKING

Parking is available on site at Owner-designated locations.

1A.23                    HOURS OF WORK

Commence no earlier than 8:00 A.M.; cease before 4:30 P.M.

1A.24                    DRESS AND BEHAVIOR

- A.    Dress: Personnel shall be fully dressed at all times.
  
- B.    Behavior: Personnel shall refrain from use of profanity, shall address or converse with no site users or passersby unnecessarily, shall engage in no rowdiness or horseplay, and shall respect the atmosphere of the cemetery.
  
- C.    Smoking: Cigarette butts may not be discarded on the ground.

1A.25                    JOBSITE SAFETY

- A.    Be responsible for the safety of all persons on site.
  
- B.    Assign a worker to be Safety Officer, and keep fully stocked first aid kit on site at all times.

00900-09

DIVISION 2 SITEWORK  
SECTION 2A EARTHWORK

2A.01      GENERAL

A.            GENERAL REQUIREMENTS

1.      The Owner-Contractor Agreement, General Conditions, Modifications to General Conditions, Supplementary General Conditions, Section 1A Special Conditions, and all Addenda items modifying any of the above documents or this Section shall be considered a part of this Section and be as binding as if written herein.
2.      Review all other Contract Documents for requirements and/or conditions affecting or relating to work described in this Section.

B.            SCOPE

Provide all labor, materials, equipment, supervision and related services and items necessary to perform all EARTHWORK work.

1.      Work Included:
  - a)      Excavation and backfilling and related work
2.      Related Work in Other Sections:
  - a)      Masonry cleaning and restoration – 4A

- C.      Before starting excavation, confer with Owner's Representatives to determine whether or not there are any underground utility lines in the work area(s). Notify Owner's Representative of all scheduled excavation work so that emergency procedures can be promptly implemented in the event of damage or dislocation, and provide temporary support as required. If an unknown line is discovered, notify Owner's Representatives so that it's status (active or inactive) can be determined and its location documented.

D. PROTECTION AND SITE RESTORATION

Perform work in a manner which minimizes impacts on surroundings including plant material, large roots and paving. Review unavoidable impacts with Architect and Owner's Representative, and obtain approval. Owner will be responsible for all pruning, transplanting and planting, including grass. Contractor will be responsible for finish grading.

E. ROCK EXCAVATION

Extra compensation will be considered for excavation of ledge rock, large boulders or other unknown obstructions.

2A.02 PRODUCTS

A. MATERIALS

1. Ordinary Fill: Screened loam.
2. Drainage Fill: Crushed or washed stone; 3/4" minimum, 1-1/2" maximum dimension.

2A.03 EXECUTION

A. CLEARING AND GRUBBING

1. Confer with Owner's Representative as to nature and extent of clearing and grubbing required; and afford Owner's staff the opportunity of pruning, transplanting and protecting plant material in work areas.
2. Remove grass and other plant material which is not dealt with by Owner's staff from work areas, and place where directed by Owner's Representative.

B. EXCAVATION

1. Conduct work at such locations, at such rates of progress, and in such a manner as to expedite new work, and minimize hazards and inconvenience.
2. Excavate minimum possible amounts consistent with proper accommodation of new foundations, to elevations indicated/required to accommodate footings.
3. Bottoms of excavations for footings shall be firm, undisturbed earth and/or rock; and shall be inspected and approved by Architect prior to work on footings or resetting.
4. Erect barriers and/or warning devices at open excavations, maintain for duration of work, and remove when new structures and backfill are complete.
5. Dewatering: Keep excavations free of water from all sources at all times.
6. Sheeting and Shoring: Where required by soil conditions provide sheeting and shoring and similar devices to keep sides of excavations from collapsing.
7. Stockpile excavated material in locations approved by Owner's Representative; covered if necessary to prevent muddy runoff.

C. BACKFILLING

1. Backfill with appropriate material: drainage fill at backs, or high sides of walls; ordinary fill at low sides or even elevations; paving base fill beneath paving or structures.

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

2. Place material in 6 inch maximum layers, moistened and compacted to achieve maximum density as follows:
- a) Beneath paving or structures: 95% as determined by ASTM D1557, Method D, optimum dry density.
  - b) Other areas: 90% as determined by ASTM D1557, Method D, optimum dry density.

D. GRADING

Establish rough grade approximately 6 inches below finish grade, and fill with loam. Owner will reestablish lawn.

E. PAVING

Patch paving which is disturbed by earth work in original material. Confer with Owner's Representative if there is any question as to elevations to meet (e.g. existing uneven elevations).

DIVISION 4 MASONRY  
SECTION 4A MASONRY RESTORATION

4A.01                    GENERAL REQUIREMENTS

A.                    GENERAL

1.        The Owner-Contractor Agreement, General Conditions, Supplementary General Conditions, Section 1A Special Conditions, and all Addenda items modifying any of the above documents or this Section shall be considered a part of this Section and be as binding as if written herein.
  
2.        Review all other Contract Documents for requirements and/or conditions affecting or relating to work described in this Section.

B.                    SCOPE

Provide all labor, materials, equipment, supervision and related services and items necessary to perform all MASONRY RESTORATION work.

1.        Work Included:
  - a)        Masonry cleaning
  - b)        Masonry removal, resetting, moving and replacement
  - c)        New masonry components
  - d)        Masonry crack repair
  - e)        Masonry consolidation/sealing

00900-14

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

2. Related Work in Other Sections:

- a) Earthwork - Section 2A

C. PROTECTION

1. Protect surroundings from damage resulting from this work.
2. Materials: Protect from dampness, contamination, freezing, and other harmful effects. Keep all manufactured materials in original, unopened, unbroken containers until ready for use.
3. New Work: Protect from impact, erosion, contamination, excessive heat or cold, excessive wetness or dryness, and other harmful effects until set or cured.

D. SAMPLES AND MANUFACTURER'S DATA

1. General: Order, fabricate, or install no materials without Architect's review and written approval of samples and manufacturer's data.
2. Stone Samples: Provide at least 3 sets of samples illustrating the full range of all characteristics for all replacement stone; minimum sizes as accepted by Architect.
3. Manufacturer's Data: Provide 3 sets of complete descriptive data on all manufactured products to Architect for

00900-15

review and approval before using.

4. Shop Drawings/Layout Drawings: Provide reproducible Shop Drawings for custom fabricated work, including all anchorage details to Architect for review and approval before beginning work.

E. SAFETY INFORMATION

Submit 3 copies of Material Safety Data Sheets for all materials for which they are available to Architect before ordering or using such materials; provide copies to all personnel working with them, and post copies at site.

F. CO-ORDINATION

Co-ordinate and integrate work with Earthwork to promote efficiency and optimum results.

G. DEBRIS DISPOSAL

Remove all debris generated by this work from site, and dispose of in a legal manner.

H. ENVIRONMENTAL CONDITIONS

Perform work with manufactured products only under conditions specified in Product Data.

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

I. TESTING:

1. Test clean every type of stone and type of soiling in the presence of the Architect, and obtain written approval before commencing full scale operations.
2. Test water consolidation/sealer treatment in the presence of the Architect and Manufacturer's Representative, and obtain Architect's written approval before commencing full scale operations.

4A.02

PRODUCTS

A. MATERIALS

1. Marble: Match existing type, grade, quality and appearance.
2. Granite: Match existing type, grade, quality and appearance.
3. Masonry Adhesive: Adhesive Engineering Co. "Concrete 1380", Sika "Sikadur 35 Hi-Mod LV", "Eva-pox", or approved equal.
4. Dowels and Cleats: Type 302 or 304 stainless steel, sized appropriately to size of masonry unit; 3/8" diameter or 1/4" thick, minimums.
5. Consolidating Sealer: Waterborne hydroxylating conversion liquid: Conservare HCT; or approved equal.

4A.03

EXECUTION

A. CLEANING EQUIPMENT

1. Environmental Conditions: Minimum temperature of air and surfaces to be cleaned: 50 degrees F.
2. Pressure Washer: Machine with variable pressure control and 5 gallons per minute flow capacity; hot water generating capability of 180 degrees F.
3. Accessories: All necessary hoses and fittings; spray wand with end mounted pressure gauge and 30 degree fan tip.
4. Maintain all equipment in proper working order, and free from fluid leaks.
5. Protect surfaces under machines with 6 mil polyethylene or other effective material to catch any fuel or lubricant leaks.

B. CLEANING PROCEDURES

1. On vertical or sloping surfaces clean from bottom up, or keep lower surfaces constantly wet during operations.
2. Water blast, holding spray tip no closer than 8 inches from surface. Use even horizontal strokes, moving spray continuously. Results shall be evenly cleaned surfaces without streaking, blotchiness or other irregularities.

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

3. Repeat above procedure as required for any areas which, in Architect's opinion, remain unacceptably soiled; but take care to avoid over-cleaning surrounding areas.
4. Be aware that special gentle procedures may be required at eroded areas, and that chemical pre-consolidation may be required at additional cost.

C. DISMANTLING

Remove masonry components carefully, taking care to prevent damage or displacement of surrounding material. Set aside for reuse, and protect from damage or theft.

D. RESETTING

1. Preparation: Verify proper heights and compaction of sub-base material.
2. Setting: Set units plumb, level (or to proper slope) and true, except slope all steps and platforms 1/8" per foot to drain. Align with adjacent units, and secure with dowels or cleats, as applicable, set in specified adhesive.

E. SURFACE ADHESIVE REPAIR

1. Preparation: Clean all surfaces of any substance which may interfere with proper bonding of adhesive.

2. Setting:

- a) General: Follow manufacturer's printed recommendations with respect to environmental conditions, preparation and application of product.
- b) Small chips (less than 1/2 lb.) may be set with clamps until adhesive has fully set and cured.
- c) Secure larger pieces with dowels set in specified product; then adhered and clamped until adhesive has fully set and cured.

F. CRACK REPAIR

- 1. Pinning: Set dowels in holes which are slightly larger in diameter than the dowels, and minimum 4 inches into each piece of stone; well bedded and completely encased in masonry adhesive.
- 2. Preparation: Clear cracks of all loose material and contaminants. Seal surface of crack with an approved temporary non-staining substance such as plaster.
- 3. Equipment: Capable of simultaneously metering, mixing and dispensing adhesive.
- 4. Injection: Inject adhesive at entry ports at top and bottom of crack, and/or along length of crack. Begin at lowest port, and continue injection until adhesive appears at next port.

Cambridge Cemetery Staircase Restorations  
Cambridge, Massachusetts

5. Finishing: Remove and/or patch all signs of entry ports, and remove temporary sealer. Patch surface if necessary to match surrounding material.

G. CONSOLIDATING SEALANT TREATMENT

1. Preparation: Verify completion of cleaning, and acceptance by Architect before starting treatment
2. General: Follow manufacturer's printed recommendations as to environmental conditions, application and protection.
3. Perform test application as specified above; obtaining Architect's written approval before proceeding.
4. Apply product to point of rejection.
5. Allow treatment to be absorbed for 30 minutes or until surface is visibly dry.
6. Repeat first two steps as indicated above until 3 saturating applications have been completed.
7. Apply finishing rinse to point of rejection.
8. Protect surfaces from rain for at least 4 hours or until surface is dry.

00900 - 21