

# **LIGHTING AND SECURITY CAMERAS AT HANCOCK CEMETERY WALK**

Quincy, Massachusetts

**Honorable Thomas P. Koch, Mayor**

Purchasing Agent, Kathryn R. Hobin

Project Team:

**LANDSCAPE ARCHITECT:**

Halvorson Design Partnership, Inc.  
25 Kingston Street, 5<sup>th</sup> Floor  
Boston, Massachusetts 02111  
Phone: 617-536-0380

**CIVIL ENGINEER:**

Howard/ Stein Hudson Associates, Inc.  
11 Beacon Street, 10th Floor  
Boston, MA 02108  
Phone: 617-482-7080

**ELECTRICAL ENGINEER:**

TMP Engineering  
52 Temple Place  
Boston, Massachusetts 02111  
Phone: 617-357-6060

**LIGHTING DESIGNER:**

Lumen Studios  
30 Hollis Street, Unit B  
Groton, Massachusetts 01450  
Phone: 978-460-0512

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With Project Assistance and Support from:

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## INVITATION TO BID

CITY OF QUINCY, MASSACHUSETTS  
PURCHASING DEPARTMENT  
1305 HANCOCK STREET, QUINCY, MA 02169

The City of Quincy acting on behalf of the Department of Public Works invites sealed bids for the;  
**“LIGHTING & SECURITY CAMERAS AT HANCOCK CEMETERY WALK”**

1307 – 1349 Hancock Street, Quincy, MA 02169

**DPW**

**Lighting & Electrical Work**

**April 9, 2015 @ 11:00 a.m.**

The Lighting and Security Cameras at Hancock Cemetery Walk includes but is not limited to: providing pedestrian pole mounted lighting and pole mounted security cameras on precast concrete foundations with conduit, wiring and connections to City of Quincy infrastructure within the existing adjacent buildings; new black vinyl coated chain link fencing and gates; earthwork, grading and reseeding of areas of disturbance. A non-mandatory pre-bid walk through is scheduled for March 25, 2015 at 10:00 a.m. at Quincy City Hall, 1305 Hancock St. 2<sup>nd</sup> Floor Conference room, Quincy, MA. 02169. All work under this contract shall be completed within One Hundred Fifty (150) calendar days. Funding source will be D.I.F.

Detailed specifications are available on-line at the City of Quincy’s website, [www.quincyma.gov](http://www.quincyma.gov) and also available at the office of the Purchasing Agent, Quincy City Hall, 1305 Hancock Street, Quincy, Massachusetts, 02169, between the hours of 8:30<sup>AM</sup> and 4:30<sup>PM</sup>.

Bids must state exceptions, if any, the delivery date and any allowable discounts. Bids/Proposals must be in a sealed envelope. The outside of the sealed envelope is to be clearly marked "**BID ENCLOSED**" with time/date of bid call.

Firm bid prices will be given first consideration. Bids/Proposals will be received at the office of the Purchasing Agent until the time and date stated above, at which time and date they will be publicly opened and read. Late Bids/Proposals, delivered by mail or in person, will be rejected.

Bidding procedures are subject to the provisions of the General Laws of the Commonwealth of Massachusetts (MGL) Chapter 30, Section 39M and applicable sections of MGL Chapter 149, sections 44A-44.

The successful bidder will be required to conform to the payment of Prevailing Wage Rates, as determined by the Commissioner of Labor & Industries under the provision of M.G.L. Chapter 149, Section 26 to 27D as amended

The right is reserved to reject any or all bids or to accept any part of a bid or the one deemed best for the City and waive any informality in the bidding if it is in the best interest of the City to do so.

**All questions regarding this bid** should be directed to Kathryn R. Hobin, Purchasing Agent through fax: 617-376-1074 and email: [khobin@quincyma.gov](mailto:khobin@quincyma.gov) and cc: to [kimtrillcott@quincyma.gov](mailto:kimtrillcott@quincyma.gov) Questions will be accepted until April 3, 2015 at 12:00 p.m.

Thomas P. Koch, Mayor

Kathryn R. Hobin, Purchasing Agent

LEGAL: MARCH 18, 2015  
LEGAL: MARCH 19, 2015

CENTRAL REGISTER  
REQ#: S040915

DEPT. CHARGED: PLANNING

**DOCUMENT 001117  
INSTRUCTIONS TO BIDDERS**

Project Name and Location: Lighting and Security Cameras at Hancock Cemetery Walk, Quincy, MA.

1. This document contains instructions to bidders for the project named above. This bidding document is not part of the Contract Documents, unless specifically referenced in the Contract.

To obtain bidding documents contact:

- a. The bidding documents are available at the Purchasing Department, Quincy City Hall, 1305 Hancock Street, Quincy, MA 02169 and through an online link provide by the City of Quincy Purchasing Department. Interested contractors may request the link at [purchasing@quincyma.gov](mailto:purchasing@quincyma.gov).

Name: Ms. Kathryn Hobin, Purchasing Agent  
Address: City of Quincy Purchasing Department  
1305 Hancock Street  
Quincy, MA 02169  
Phone: 617-376-1060  
Email: [khobin@quincyma.gov](mailto:khobin@quincyma.gov)  
Cc: [kimtrillcott@quincyma.gov](mailto:kimtrillcott@quincyma.gov)

The bidding documents are available for review at:

Address: Department of Planning & Community Development  
34 Coddington Street  
Third Floor  
Quincy, MA 02169  
Phone: 617-376-1362

2. Deposits for Documents: a cost of \$100 per set for printing charge will be refunded if returned within 10 days of bid opening and in unused condition.
3. Submission of Bids: All bids must be sealed and clearly labeled as described in Invitation to Bid and hand delivered. Submit all bid documents and required forms before the time and date below.

Submit Bids to:

Name: Ms. Kathryn Hobin, Purchasing Agent  
Address: City of Quincy Purchasing Department  
1305 Hancock Street  
Quincy, MA 02169  
Phone: 617-376-1060

**Bids due: Date and Time of day:** General Bids – April 9, 2015 @ 11:00 AM Vendor must submit one original copy and one copy.

4. A Bid Security is required – 5% bid bond.

5. A 100% Performance and 100% Payment Bond is required.
6. Oral modifications to bids will not be considered.
7. All blanks must be filled in on bid forms.
8. The City of Quincy reserves the right to reject or accept any or all bids or to enter into negotiations with any bidder. The City of Quincy reserves the right to waive any alleged breach of technicality.
9. The City of Quincy reserves the right to modify the Contract Documents and re-bid the project, if necessary, to meet the budgetary requirements.
10. **All questions regarding this bid** should be directed to Kathryn R. Hobin, Purchasing Agent through fax: 617-376-1074 and email: [khobin@quincyma.gov](mailto:khobin@quincyma.gov) and cc: to [kimtrill-cott@quincyma.gov](mailto:kimtrill-cott@quincyma.gov) Questions will be accepted until April 3, 2015 at 12:00 p.m.

All RFI questions shall be on a form including the following information:

1. Request for Information (RFI) number and date
  2. Company name, address, e-mail
  3. Project Name
  4. Subject
  5. Discipline
  6. Category
  7. Question
  8. Contact name, e-mail
11. A non-mandatory pre-bid walk thru will be held on March 25, 2015 at 10:00 AM at City Hall, 2<sup>nd</sup> Floor Conference Room.
  12. The Contractor shall visit the site and carefully examine the areas affected and all conditions, which may affect proper execution of the work, including field dimensions. The City of Quincy will provide additional access at their convenience. No claims for additional costs will be allowed because of lack of full knowledge of the existing conditions. Contractor's proposal shall include all work necessary to complete the work as hereinafter specified.
  13. The Contractor shall include all charges for labor, materials, tools, staging, equipment, and supervision to complete, in a thoroughly workmanlike manner, all the work described hereafter. All work shall be according to code and approved by the proper authority.
  14. The Contractor shall be responsible for obtaining all necessary permits required for the work. Such permits shall be obtained from the local and state authorities having jurisdiction over the work. There will be no fee associated with building permits issued by the Inspectional Services Department, City of Quincy.
  15. Where necessary, the Contractor shall take full and protective precautions to protect any and all property and structures in the vicinity of the work area from any damage whatsoever arising from the work. He shall, at his own expense, completely repair to the satisfaction of the City and all damages to such property and structures arising from his operations.

16. Materials having salvage value shall become the property of the City. All other materials and debris accumulated because of this operation shall be deposited in a designated dumpster on site. No hazardous materials shall be left on site or deposited in any container on site. The premises are to be left clean and neat.
17. Changes to the work order from these specifications, as written shall not be made by the Subcontractor except as provided in the General Conditions of the Contract. The City of Quincy will not pay for any work done by the Contractors unless the Owner's Representative confirms the change or changes in writing prior to the execution of these changes. AIA Form G701 shall be used to show any additions or deductions to the contract proposal.
18. The City of Quincy reserves the right to reject any and all bids for the work, for any reason, and to waive any informalities in the bid procedure of bidding and to award the work to the bidder most suitable to the interest of the City of Quincy.
19. Liquidated Damages: If Contractor shall fail to complete the work so as to achieve Final Completion within the contract time or extension of time granted by the City, the Contractor shall pay to the City the amount of liquidated damages shall be as indicated in Document 001118 – Form for General Bid for each calendar day that the Contractor shall be in default.
20. Proposal shall also include total price for the complete work.
21. Contractor's invoices or requisitions shall be submitted using AIA Form G702 and G702A. All requisitions shall be notarized.
22. The Bidder is advised that City of Quincy is a "not for profit public agency" and is not required to pay the Massachusetts Sales Tax on materials to be purchased and built into the work. Contractor proposal and invoices for the project shall reflect this requirement.
23. Contractor shall furnish to the City when requested and before or with his invoice or requisition, Release of Lien form similar to AIA Document G706A.

**END OF DOCUMENT**

**DOCUMENT 001118  
FORM FOR GENERAL BID**

Due Date for Bid, April 9, 2015 @ 11:00 AM

TO: The Awarding Authority

- A. **BASE BID:** The undersigned proposes to furnish all labor and materials required for construction of Adams Green in Quincy, Massachusetts in accordance with Contract Documents, including Drawings and Specifications, all as prepared by Halvorson Design Partnership, Inc. for the Contract Price specified below, subject to additions and deductions according to the terms of the Contract Documents.
- B. **CONTRACT PRICE:** The proposed Contract Price is \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_).
- C. **ADDENDA:** This Bid includes Addenda numbered: \_\_\_\_\_
- D. **UNIT PRICES:** Should certain additional work be required, or should the quantities of certain classes of work be increased or decreased from those on which the General Bid is to be based, by order or approval of the Owner's Representative, the undersigned agrees that Section 012200 - Unit Price Proposal Sheet will be the basis of payment to him or credit to the Awarding Authority for such addition, increase or decrease in the Work. Unit Prices given shall represent the exact net amount per unit to be paid the Contractor (in the case of additions or increases) or to be refunded the Awarding Authority (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, compensation insurance or other direct or indirect expenses of Contractor or Subcontractors. The Awarding Authority shall have the right to reject any or all proposed Unit Prices at any time prior to signing the Agreement, in which case the cost of extra work shall be as determined by one of the other methods set forth in Article 7 of the GENERAL CONDITIONS.
- E. **ESTIMATED QUANTITIES:** Estimated quantities identified in the Section 012200- Unit Price Proposal Sheet shall be included in the total Contract Price listed in paragraph B. of this Form for General Bid.
- F. **TIME OF COMPLETION:** The undersigned agrees to commence work within five (5) days of issuance of Document 001141 – NOTICE TO PROCEED and to complete the Work so as to achieve Final Completion on or before 150 calendar days from the date of Notice to Proceed including evenings and weekends. In case the Work is not completed within the specified time, it is understood and agreed that the Contractor shall pay the Owner, not as a penalty but as liquidated damages, the sums stated in Document 001117 – INSTRUCTIONS TO BIDDERS, for each calendar day after which completion was required for that Phase, as further provided in Division 1 of the Specifications.

- G. SCHEDULE AND PRIORITIES: The undersigned agrees to prioritize the following work activities within the following schedule unless otherwise approved by the Owner's Representative: complete site preparation and demolition, excavation and earthwork, subsurface conduit, wiring and foundations and rough grading within 90 calendar days of Notice to Proceed; complete furnishing and installing pole mounted lighting, pole mounted cameras and black vinyl coated chain link fencing and gates within the 120 days of Notice to Proceed; and complete loam and seeding with established lawn within 130 days of Notice to Proceed.
- H. LIQUIDATED DAMAGES: If Contractor shall fail to complete the work so as to achieve Final Completion within the contract time or extension of time granted by the City, the Contractor shall pay to the City the amount of liquidated damages of \$1,200. per day for each calendar day that the Contractor shall be in default.
- H. CONTRACT: The undersigned agrees that, if he is selected as General Contractor, he will, within five (5) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a Contract in accordance with the terms of this General Bid and furnish a Performance Bond and also a Labor and Materials or Payment Bond, each of a Surety Company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority, and each in the sum of one hundred percent (100%) of the Contract Price, the premiums for which are to be paid by the General Contractor and are included in the Contract Price.
- I. LABOR: The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work, and that he will comply fully with all laws and regulations applicable to awards made subject to Section 44A of Chapter 149 of the Massachusetts General Laws.
- J. OSHA CERTIFICATION: In accordance with M.G.L.c. 30, Section 39S bidders shall include with their bids a certificate indicating "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...".
- K. NON-COLLUSION CERTIFICATION: The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this Paragraph, the word "person" shall mean any natural person, joint venture, partnership, corporation, or any other business or legal entity.
- L. TAXES: As required by MGL Chapter. 62c, Section 49A, Chapter 62C, the undersigned certifies that the bidder has complied with all laws of the Commonwealth relating to taxes.

M. DEBARMENT: The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under provisions of Section 29F of Chapter 29, or any other applicable debarment provisions of any other Chapter of the General Laws or any rule or regulation promulgated thereunder.

Date: \_\_\_\_\_

Name of General Bidder: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_

City and State: \_\_\_\_\_

NOTE: This proposal must bear the written signature of the Bidder. If the Bidder is a partnership, the proposal must be signed by a partner. If the Bidder is a corporation, the proposal must be signed by a duly authorized officer or agent of such corporation.

END OF DOCUMENT

**DOCUMENT 001125  
CERTIFICATION OF BIDDER  
REGARDING EQUAL EMPLOYMENT OPPORTUNITY**

This certification is required pursuant to Executive Order 112A6 (30 R.R. 123 1935). The implementing rules and regulations, provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity cause: and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) calendar days after bid opening. No contract shall be awarded unless such report is submitted.

**CERTIFICATION BY BIDDER**

NAMES AND ADDRESS OF BIDDER (Include Zip Code):

- |    |   |     |    |
|----|---|-----|----|
| 1. | Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.              | Yes | No |
| 2. | Compliance reports were required to be filed in connection with such contract or subcontract.                       | Yes | No |
| 3. | Bidder has filed all compliance reports due under applicable instructions, including SF-100.                        | Yes | No |
| 4. | Have you ever been or are you being considered for sanction due to violation of the Executive of 112A6, as amended? | Yes | No |

Name and Title of Signatory (Please Type)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**DOCUMENT 001128**  
**AFFIDAVIT REGARDING PRIOR LABOR DISPUTES**

The Bidder must execute and complete the following statements as to whether it has been the subject of, or otherwise been involved in, any labor dispute during the past five (5) years. If the Bidder has been the subject of, or otherwise been involved in any labor dispute during this period, the bidder must also provide a detailed description of each labor dispute, including the name and location of the project worked on, the nature of the dispute was resolved. For these purposes, "labor disputes" shall include picketing or any other activity which disrupted or delayed the work.

I \_\_\_\_\_, being first duly sworn, do hereby depose/state:  
(Name)

1. I make each of the following statements with full authorization to bind

\_\_\_\_\_ to each of the representations made below.  
(Name of Bidder)

2. \_\_\_\_\_ has/has not been involved in a labor dispute  
(Name of Bidder)

as described above, within the past five (5) years.

3. (Complete only if bidder has been involved in dispute).

The dispute(s) occurred on the following project(s). (Use separate sheet if necessary)

<u>Name and Location of Project</u>	<u>Date Dispute Began</u>	<u>Date Concluded</u>
-------------------------------------	---------------------------	-----------------------

a. _____	_____	_____
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b. _____	_____	_____
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Attach separate sheet and give full description of the nature of each dispute and an explanation of how it was resolved. (Please give a full description below, for each such dispute).

Signed under the penalty of perjury this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

BY: \_\_\_\_\_

on behalf of: \_\_\_\_\_  
(company name)

**DOCUMENT 001129  
CERTIFICATION  
INTERNAL ACCOUNTING**

The Contractor certifies that it has internal accounting controls, as required by Chapter 30, Section 39R and that the Contractor will:

1. maintain accurate and detailed accounts for a six (6) year period after the final payment;
2. file regular statements of management concerning internal auditing controls;
3. file an annual audited financial statement; and
4. submit a statement from an independent certified public accountant that such CPA has examined management's internal auditing controls and expresses an opinion as to their consistency with management's statements in (2) above, and whether such statements are reasonable with respect to transactions and assets that are substantial in relation to designer's financial statements. General Laws, Chapter 7, Section 301 (e).

Signed under the pains and penalties of perjury:

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

\_\_\_\_\_  
Authorized Signature

Note: This form is to be completed only when the contract exceeds \$100,000 and is for the purchase of materials or for the construction, renovation, etc. of public works or public buildings.

**(To be typed onto letterhead of the Certified Public Accountant)**

City of Quincy  
City Solicitor's Office  
1305 Hancock Street  
Quincy, MA 02169

Attn: Jim Timmins  
City Solicitor

RE: \_\_\_\_\_  
Project Name

Dear Mr. Timmins;

Please be advised that I have reviewed the statement on internal accounting controls prepared by/for \_\_\_\_\_ (Name of company), in connection with the above captioned project. This statement is required under Massachusetts General Laws, Chapter 30, Section 39R. In our opinion, representations of management are consistent with our evaluation of the system of internal accounting controls. In addition, we believe that they are reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the firm's financial statements.

Yours sincerely,

\_\_\_\_\_  
Certified Public Accountant

Note: This form is to be completed only when the contract exceeds \$100,000. and is for the purchase of materials or for the construction, renovation, etc. of public works or public buildings.

**DOCUMENT 001131  
BID BOND**

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned,

\_\_\_\_\_ as Principal and

\_\_\_\_\_ as Surety, are hereby held and firmly bound

unto \_\_\_\_\_ as OWNER in the penal sum of

\_\_\_\_\_ for the payment of which, well and truly to be made, we hereby jointly

and severally bind ourselves, successors and assigns \_\_\_\_\_.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 2015

The Condition of the above obligation is such that whereas the Principal has submitted to

\_\_\_\_\_ a certain BID, attached hereto and hereby made

a part hereof to enter into a contract in writing for the:

NOW, THEREFORE,

(A) If said BID shall be rejected, or

(B) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor, or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall in no way be impaired or affected by any extension of the time within which the OWNER may accept such BID, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these present to be signed by their proper officers the day and year first set forth above.

\_\_\_\_\_  
Principal (L.S.)

Surety

BY:

**IMPORTANT:** Surety companies executing BONDS must appear on the Treasury Department's most current list (Cir. 570, as amended) and be authorized to transact business in the state where the project is located.

**END OF DOCUMENT**



**DOCUMENT 001132**

***CITY OF QUINCY***  
***Purchasing Department***  
***1305 Hancock Street, Quincy, MA 02169***

**SIGNATURE AUTHORIZATION**

At a duly authorized meeting of the Board of Directors of the

\_\_\_\_\_  
(NAME OF CORPORATION)

held on \_\_\_\_\_, at which all the Directors were present or waived notice, it was:  
(DATE)

VOTED, that:

\_\_\_\_\_  
(NAME)

\_\_\_\_\_  
(OFFICER)

of this company, be and he/she hereby is authorized to execute Contracts and Bonds in the name and behalf of said Company, and affix its Corporate Seal thereto, and such execution of any Contract or obligation in this Company's name on its behalf by \_\_\_\_\_ under seal of the Company, shall be valid  
(OFFICER)

and binding upon this Company. It was further voted that the City of Quincy may rely on such authorization of future Contracts until notified to the contrary.

A true copy,

ATTEST:

\_\_\_\_\_  
(CLERK'S SIGNATURE)

PLACE OF BUSINESS: \_\_\_\_\_

DATE OF THIS CONTRACT: \_\_\_\_\_

I hereby certify that I am the Clerk of the:

\_\_\_\_\_ that  
(COMPANY)

\_\_\_\_\_ is the  
(NAME)

duly elected \_\_\_\_\_ of said Company, and that the above VOTE has not been

\_\_\_\_\_  
(TITLE)

amended or rescinded and remains in full force and effect as of the date of this Contract.

\_\_\_\_\_  
CORPORATE SEAL

**DOCUMENT 001134**  
**FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR**

**PART 1 - GENERAL**

---

1.1 OWNER-CONTRACTOR AGREEMENT

- A. The attached sample copy of the "AIA A101 Standard Form of Agreement between Owner and Contractor 2007 edition", is hereby made part of these Contract Documents. This form of agreement shall be used by Contractor in fulfilling the requirements of these Contract Documents.

**PART 2 - PRODUCTS (Not Used)**

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**PART 3 - EXECUTION (Not Used)**

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**END OF DOCUMENT**

 **AIA**® Document A101™ – 2007

**Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum**

AGREEMENT made as of the \_\_\_\_\_ day of \_\_\_\_\_  
in the year \_\_\_\_\_  
*(In words, indicate day, month and year.)*

**BETWEEN** the Owner:  
*(Name, legal status, address and other information)*

and the Contractor:  
*(Name, legal status, address and other information)*

for the following Project:  
*(Name, location and detailed description)*

The Architect:  
*(Name, legal status, address and other information)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

The Owner and Contractor agree as follows.

Init.

**AIA Document A101™ – 2007. Copyright © 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1967, 1974, 1977, 1987, 1991, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** Purchasers are permitted to reproduce ten (10) copies of this document when completed. To report copyright violations of AIA Contract Documents, e-mail The American Institute of Architects' legal counsel, [copyright@aia.org](mailto:copyright@aia.org).

041211ACD44

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- 10 INSURANCE AND BONDS

**ARTICLE 1 THE CONTRACT DOCUMENTS**

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

**ARTICLE 2 THE WORK OF THIS CONTRACT**

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

**ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**

**§ 3.1** The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.  
*(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)*

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

**§ 3.2** The Contract Time shall be measured from the date of commencement.

Init.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ( ) days from the date of commencement, or as follows:  
*(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)*

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.  
*(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)*

**ARTICLE 4 CONTRACT SUM**

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$ ), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:  
*(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)*

§ 4.3 Unit prices, if any:  
*(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)*

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.4 Allowances included in the Contract Sum, if any:  
*(Identify allowance and state exclusions, if any, from the allowance price.)*

Item	Price
------	-------

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the \_\_\_\_\_ day of the \_\_\_\_\_ month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than ( \_\_\_\_\_ ) days after the Architect receives the Application for Payment.  
*(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of \_\_\_\_\_ percent ( \_\_\_\_\_ %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of \_\_\_\_\_ percent ( \_\_\_\_\_ %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and  
*(Section 9.8.5 of AIA Document A201-2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)*
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201-2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

*(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)*

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

#### § 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201-2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

### ARTICLE 6 DISPUTE RESOLUTION

#### § 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201-2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

#### § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201-2007, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201-2007
- Litigation in a court of competent jurisdiction
- Other: *(Specify)*

Init.

**ARTICLE 7 TERMINATION OR SUSPENSION**

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

**ARTICLE 8 MISCELLANEOUS PROVISIONS**

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. *(Insert rate of interest agreed upon, if any.)*

§ 8.3 The Owner’s representative:  
*(Name, address and other information)*

§ 8.4 The Contractor’s representative:  
*(Name, address and other information)*

§ 8.5 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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Init.

§ 9.1.4 The Specifications:

*(Either list the Specifications here or refer to an exhibit attached to this Agreement.)*

Section	Title	Date	Pages
---------	-------	------	-------

§ 9.1.5 The Drawings:

*(Either list the Drawings here or refer to an exhibit attached to this Agreement.)*

Number	Title	Date
--------	-------	------

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:
- .2 Other documents, if any, listed below:  
*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)*

Init.

**ARTICLE 10 INSURANCE AND BONDS**

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

*(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201-2007.)*

Type of Insurance or Bond

Limit of Liability or Bond Amount (\$0.00)

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

\_\_\_\_\_  
OWNER *(Signature)*

\_\_\_\_\_  
CONTRACTOR *(Signature)*

\_\_\_\_\_  
*(Printed name and title)*

\_\_\_\_\_  
*(Printed name and title)*

**CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.**

Init.

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**DOCUMENT 001135  
GENERAL CONDITIONS OF THE CONTRACT**

**PART 1 - GENERAL**

---

1.1 GENERAL CONDITIONS

- A. The attached sample copy of the "AIA A201 General Conditions of the Contract for Construction, 2007 edition", is hereby made part of these Contract Documents. These conditions apply to the Work of the Contractor in fulfilling the requirements of the Contract Documents.

**PART 2 - PRODUCTS (Not Used)**

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**PART 3 - EXECUTION (Not Used)**

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**END OF DOCUMENT**

# AIA<sup>®</sup> Document A201<sup>™</sup> – 2007

## *General Conditions of the Contract for Construction*

for the following PROJECT:  
*(Name and location or address)*

THE OWNER:  
*(Name, legal status and address)*

THE ARCHITECT:  
*(Name, legal status and address)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

#### § 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

#### § 1.1.2 The Contract

The Contract Documents form the Contract for Construction. 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. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### § 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided 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.

#### § 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

#### § 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

#### § 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### § 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### § 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

### § 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 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, and 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 indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### § 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

### § 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### § 1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

### § 1.6 Transmission of Data in Digital Form

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

## ARTICLE 2 OWNER

### § 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### § 2.2 Information and Services Required of the Owner

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

### § 2.3 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

### § 2.4 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## ARTICLE 3 CONTRACTOR

### § 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 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 Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

### § 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the

information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### **§ 3.3 Supervision and Construction Procedures**

**§ 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. 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, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### **§ 3.4 Labor and Materials**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

**§ 3.4.2** Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### § 3.5 Warranty

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### § 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### § 3.7 Permits, Fees, Notices and Compliance with Laws

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

### § 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 Allowances

**§ 3.8.1** The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

**§ 3.8.2** Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 Contractor's Construction Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### § 3.11 Documents and Samples at the Site

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### § 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 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.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### § 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### § 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner 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 Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### § 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

### § 3.16 Access to Work

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

### § 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

### § 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, 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), but only to the extent caused by the 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 that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 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 Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

## ARTICLE 4 ARCHITECT

### § 4.1 General

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

#### § 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 Communications Facilitating Contract Administration

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect 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 Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, 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. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. 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 Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect 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. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be

issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

### **§ 5.3 Subcontractual Relations**

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

### **§ 5.4 Contingent Assignment of Subcontracts**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

## **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

### **§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts**

**§ 6.1.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

**§ 6.1.2** When 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 Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule 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 Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

#### § 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

#### § 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

### ARTICLE 7 CHANGES IN THE WORK

#### § 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

#### § 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

#### § 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in

the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

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

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

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

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect 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 Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in 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.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 Minor Changes in the Work

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

### ARTICLE 8 TIME

#### § 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### § 8.2 Progress and Completion

§ 8.2.1 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.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

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

#### § 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

### ARTICLE 9 PAYMENTS AND COMPLETION

#### § 9.1 Contract Sum

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

#### § 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### § 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 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 Owner, 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 compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

### § 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

### § 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as

may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

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

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

#### § 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

#### § 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after

the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

#### **§ 9.8 Substantial Completion**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**§ 9.8.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. 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.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

#### **§ 9.9 Partial Occupancy or Use**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect 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.

**§ 9.9.3** 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.

#### **§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will

promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**§ 9.10.4** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 Safety Precautions and Programs**

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

### **§ 10.2 Safety of Persons and Property**

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance 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 sites and utilities.

§ 10.2.4 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 supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

#### § 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### § 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of

the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, 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), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

**§ 10.3.6** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

#### **§ 10.4 Emergencies**

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 Contractor's Liability Insurance**

**§ 11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 11.1.2** The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

**§ 11.1.3** Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall

be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

**§ 11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

#### **§ 11.2 Owner's Liability Insurance**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

#### **§ 11.3 Property Insurance**

**§ 11.3.1** Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

**§ 11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

**§ 11.3.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

**§ 11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

**§ 11.3.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

**§ 11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

#### **§ 11.3.2 Boiler and Machinery Insurance**

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

### § 11.3.3 Loss of Use Insurance

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

### § 11.3.7 Waivers of Subrogation

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

#### **§ 11.4 Performance Bond and Payment Bond**

**§ 11.4.1** The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

**§ 11.4.2** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

#### **ARTICLE 12 UNCOVERING AND CORRECTION OF WORK**

##### **§ 12.1 Uncovering of Work**

**§ 12.1.1** If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

**§ 12.1.2** If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

##### **§ 12.2 Correction of Work**

###### **§ 12.2.1 Before or After Substantial Completion**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

###### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, 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 Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

**§ 12.2.2.2** The one-year period for correction of Work 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 completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

**§ 12.2.3** The Contractor shall remove from the site 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 Owner.

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

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates 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.

#### § 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

### ARTICLE 13 MISCELLANEOUS PROVISIONS

#### § 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

#### § 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

#### § 13.3 Written Notice

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

#### § 13.4 Rights and Remedies

§ 13.4.1 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.

§ 13.4.2 No action or failure to act by the Owner, Architect or 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 there under, except as may be specifically agreed in writing.

#### § 13.5 Tests and Inspections

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

#### § 13.6 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

#### § 13.7 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

### ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

#### § 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

## § 14.2 Termination by the Owner for Cause

### § 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

## § 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

## § 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 Claims

#### § 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

#### § 15.1.2 Notice of Claims

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

#### § 15.1.3 Continuing Contract Performance

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

#### § 15.1.4 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### § 15.1.5 Claims for Additional Time

§ 15.1.5.1 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's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

#### § 15.1.6 Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### § 15.2 Initial Decision

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from

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the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### § 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

#### § 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing 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.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 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.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

#### § 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

**DOCUMENT 001136  
INSURANCE REQUIREMENTS**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 INSURANCE REQUIREMENTS

- A. The General Contractor shall purchase and maintain such insurance as will protect him from claims under worker's compensation acts and from claims for damages because of bodily injury, including death, and property damage which might arise from and during operations under this Contract, whether such operations be by himself or by a Subcontractor or anyone directly or indirectly employed by either of them.
- B. Contractor shall not commence work under this Contract until he has obtained all insurance required herein nor until such insurance has been approved by the Owner. Contractor shall not allow any Subcontractor to commence work until the insurance required of the Subcontractor has been so obtained and approved.
- C. Subcontracts: Contractor shall either (1) require each Subcontractor to procure and to maintain during the life of his Subcontract, Subcontractor's General Liability and Property Damage Insurance of same type and in same manner as specified herein, or (2) insure activities of his Subcontractors in his own policy.
- D. All insurance required by this Section shall be provided by a Best "A"-rated company, or companies, authorized to do business in the Commonwealth of Massachusetts and satisfactory to the Owner and shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater. The Owner shall be named as an additional insured under all policies.
- E. Certificates: Certificates of Insurance acceptable to the Owner shall be submitted in triplicate to the Owner simultaneously with the execution to the Contract. Certificates shall indicate that broad form Contractual Liability coverage is in force, as well as deletions of the XCU exclusions. Certificates shall contain a provision that the insurance company will notify the Owner by registered mail at least sixty (60) calendar days in advance of any cancellation, change or expiration of the policies. Certificates shall include description of coverage, effective dates and expiration dates of policies.
- F. Deductibles: In the event of paid claims, Contractor shall bear costs of any amounts deductible.
- G. Waiver: Submit to the consent of their respective insurers, the Owner and the Contractor waive all rights against each other and against the subcontractors, consultants, agents and employees of the other, for damages to the Project covered by any property insurance.

### 1.3 COVERAGE AND LIMITS

- A. Worker's Compensation Insurance: Procure and maintain during the life of this Contract Workers Compensation and Employer's Liability Insurance as required by State law for all employees to be engaged in work at the site of the Project. In case of any such work sublet, Contractor shall require subcontractors similarly to provide Workers Compensation and Employer's Liability Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Insurance. The limit of liability for Employers Liability insurance shall be not less than **[\$500,000.00]**. In case any class of employees engaged in hazardous work on the Project under this Contract is not protected under the Workers Compensation Statute, the Contractor shall provide and shall cause each Subcontractor to provide Employer's Liability Insurance with a limit of at least **[\$2,000,000]** for each accident for the protection of such of his employees as are not otherwise protected.
- B. Contractor's General Liability and Property Damage Insurance: Procure and maintain during the life of this Contract, Comprehensive Contractor's General Liability Insurance, with the Owner as additional named insured, covering bodily injury, including accidental death, with limits of **[\$2,000,000]** per person, **[\$2,000,000]** per occurrence; and property damage insurance with limits of **[\$2,000,000]** per occurrence, including products and completed operations, explosion, collapse, undermining and damage to underground utilities (X.C.U) and Broad Form Property Damage Coverage. Before any blasting is done, Contractor shall present evidence that blasting damage is included in his insurance coverage. Provide a separate policy for completed operations for a period of two (2) years from date of Final Completion of the Project. Any policy issued shall include permission for partial or total occupancy by Owner within the scope of this Contract. Coverage shall also include Owner's and Contractor's protective liability favoring the Owner and an umbrella of excess liability in the amount of **[\$10,000,000 (ten million dollars)]** minimum.
- C. Contractor's Automobile Liability Insurance: Procure and maintain during the life of this Contract Comprehensive Automobile Liability Insurance, including all owned, non-owned, and hired automobiles, with the Owner as additional named insured, covering bodily injury, including accidental death, with limits of **[\$2,000,000]** per person, **[\$2,000,000]** per occurrence and property damage insurance with limits of **[\$2,000,000]** per occurrence.
- D. All-Risk Insurance: Procure and maintain during the life of this Contract All-Risk builder's Risk Insurance on a 100% completed value basis, with the Owner named as an additional insured as his interests may appear. In the event of paid claims, the Contractor shall bear the costs of any amounts deductible under the policy.
- E. Boiler and Machinery Insurance: Procure and maintain boiler and machinery insurance which shall specifically cover such insured objects during installation and until final acceptance by Owner.

### **PART 2 - PRODUCTS (Not Used)**

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### **PART 3 - EXECUTION (Not Used)**

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**END OF DOCUMENT**

**DOCUMENT 001137  
PERFORMANCE AND PAYMENT BOND**

**PART 1 - GENERAL**

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1.1 PERFORMANCE AND PAYMENT BOND

- A. The attached copy of the American Institute of Architects "Performance and Payment Bond", Document No. A-312 - 2010, is hereby made part of these Contract Documents. This form of performance bond shall be used by Contractor and Surety in fulfilling the requirements of these Contract Documents.
- B. The Performance Bond shall be in the amount of one hundred percent (100%) of the Contract Price for faithful performance of this Contract.
- C. The Payment Bond shall be in the amount of one hundred percent (100%) of the Contract Price for faithful performance of this Contract.
- D. The cost of the Performance Bond shall be included in the Contract Amount.

**PART 2 - PRODUCTS (Not Used)**

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**PART 3 - EXECUTION (Not Used)**

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**END OF DOCUMENT**



# AIA<sup>®</sup> Document A312<sup>™</sup> – 2010

## Performance Bond

**CONTRACTOR:**

*(Name, legal status and address)*

Sample

Sample

Sample

**OWNER:**

*(Name, legal status and address)*

Sample

Sample

Sample

**CONSTRUCTION CONTRACT**

Date:

Amount:

**Description:**

*(Name and location)*

Sample

Sample

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount:

Modifications to this Bond:  None  See Section 16

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

**SURETY**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name

and Title:

*(Any additional signatures appear on the last page of this Performance Bond.)*

Signature: \_\_\_\_\_

Name

and Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

*(Architect, Engineer or other party:)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

#### § 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

*(Corporate Seal)*

Company:

*(Corporate Seal)*

Signature: \_\_\_\_\_

Name and Title:

Address:

Signature: \_\_\_\_\_

Name and Title:

Address:



# AIA Document A312™ – 2010

## Payment Bond

**CONTRACTOR:**

*(Name, legal status and address)*

Sample

Sample

Sample

**OWNER:**

*(Name, legal status and address)*

Sample

Sample

Sample

**CONSTRUCTION CONTRACT**

Date:

Amount:

**Description:**

*(Name and location)*

Sample

Sample

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount:

Modifications to this Bond:  None  See Section 18

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

**SURETY**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name

and Title:

*(Any additional signatures appear on the last page of this Payment Bond.)*

Signature: \_\_\_\_\_

Name

and Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

*(Architect, Engineer or other party:)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

**§ 10** The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

**§ 11** The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

**§ 12** No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

**§ 13** Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

**§ 14** When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

**§ 15** Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

#### **§ 16 Definitions**

**§ 16.1 Claim.** A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

**§ 16.2 Claimant.** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

**§ 16.3 Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

*(Corporate Seal)*

Company:

*(Corporate Seal)*

Signature: \_\_\_\_\_

Name and Title:

Address:

Signature: \_\_\_\_\_

Name and Title:

Address:

**DOCUMENT 001138  
CERTIFICATE OF INSURANCE**

This is to certify that the \_\_\_\_\_ (Company) has issued the policies listed below, that these policies are written in accordance with the Company's standard policies and endorsements, except as indicated below or as noted in the attachments herewith, which policies and endorsements will be made available to ENGINEER and OWNER UPON request, that they provide coverage and limits of liability shown with respect to the insurance indicated that they are in force on this date, that all deductible amounts are indicated below, and that this Certificate is furnish in accordance with and for the purpose of satisfying the requirements of OWNER and ENGINEER in connection with the award and performance of a contract or agreement between \_\_\_\_\_ (OWNER), and

- 1. Name of Insured
- 2. Address of Insured
- 3. Location and Description of Work
- 4. Project Contract No.

-----  
Coverage and Limits of Liability (at least as shown below)

Bodily Injury Liability			Property Damage Liability			
Policy Number	Effective Date	Expiration Date	Each Occurrence	Each Aggregate	Occurrence	Aggregate
A. Owner's Protective Liability has been issued at the expense of Above Insured to _____ Owner.						
_____	_____	_____	\$2,000,000.	\$2,000,000.	\$2,000,000.	\$2,000,000.
B. Comprehensive General Liability						
_____	_____	_____	\$2,000,000.	\$2,000,000.	\$2,000,000.	\$2,000,000.

Including:

- 1. Operations Premises
- 2. Contractor's Protective
- 3. Contractual as Below
- 4. Products/Completed Operations
- 5. Personal Injury

Property Damage Insurance under policies A & B above includes Cover For Explosion/ Collapse/  
Underground Property Damage.

-----			
C. Auto Liability	Each	Each	Each
Including 1. Owner 2. Hired 3. Non-owned	Person	Accident	Accident
_____	\$2,000,000.	\$2,000,000.	\$2,000,000.
-----			

D. Workmen's Compensation	Compensation Statutory State's
_____	Coverage B Limits \$1,000,000. if applicable
-----	

E. Builder's Risk Insurance - All Risk Completed Value form	
_____	As called for in Contract or Agreement
-----	

CONTRACTUAL LIABILITY

CONTRACTOR shall at all times indemnify and save harmless OWNER, ENGINEER and their respective officers, agents and employees on account of any and all claims, damages, losses, litigation, expenses, counsel fees and compensation arising out of injuries (including death) sustained by or alleged to have been sustained by the officers, agents and employees of said OWNER or ENGINEER or of CONTRACTOR, his subcontractors, or material men, and from injuries (including death sustained by or alleged to have been sustained by the public, any or all persons on or near the Work, or by any other person or property, real or personal (including property of said OWNER or ENGINEER caused in whole or in part by the acts, omissions, or neglect of CONTRACTOR including but not limited to any neglect in safeguarding the work or through the use of unacceptable materials in contracting the Work by CONTRACTOR, any subcontractor, material man, or anyone directly or indirectly employed by them or any of them while engaged in the performance of the contract, including the entire elapsed time from the date ordered to start work or the actual start, whichever occurs first, until completion of the one year correction period, as certified by OWNER or ENGINEER.

Policies A, B, C & D shall remain in effect during the one year correction period.

Such insurer as is herein certified applies to all operations of the insured in connection with, and necessary and incidental to, the work herein described at the locations stated.

It is hereby understood and agreed that the above policies will not be restricted, suspended, materially changed, nor canceled without 15 days advance notice by registered mail to OWNER and ENGINEER. \_\_\_\_\_.

\_\_\_\_\_  
Authorized Representative Signature

\_\_\_\_\_  
Address

**DOCUMENT 001139  
INDEMNITY AGREEMENT**

In consideration of the award of the Contract for "Lighting & Security Cameras at Hancock Cemetery Walk" by the City of Quincy, hereinafter referred to as INDEMNITEE, to the CONTRACTOR/BIDDER:

\_\_\_\_\_.

hereinafter referred to as INDEMNITOR, and for other good and valuable consideration, said INDEMNITOR agrees to hold INDEMNITEE, City of Quincy, and its various department and employees harmless from any and all liability, loss or damage that INDEMNITEE may suffer as the result of claims, demands, costs, including attorneys fees, or judgement or other actions against it by reason of any and all work done by or on behalf of the INDEMNITOR in connection with the above-referenced contract.

INDEMNITOR,

\_\_\_\_\_  
By Duly Authorized Agent

Date:\_\_\_\_\_.

**DOCUMENT 001140  
NOTICE OF AWARD**

**TO:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT TITLE: \_\_\_\_\_

The City has considered the Bid submitted by you for the above described work in response to its Advertisements for Bids and Information for Bidders. You are hereby notified that your Bid in the amount \$ \_\_\_\_\_ has been accepted, provided you furnish the City with the required Certificates, Affidavits, Contractor's Performance and Payments Bonds and Certificate of Insurance within ten (10) days receipt of this notice to execute the Agreement. In case of failure to execute said Agreement and to furnish said bonds and documents as stipulated in the Bid Documents within ten (10) days from the date of receipt of this Notice, the City will be entitled to consider all your rights arising out of the City's acceptance of your Bid as abandoned and as a forfeiture of your bid bond. The City will also be entitled to such other rights as may be granted by law. You are required to return an acknowledged copy of the Notice of Award to the City.

Dated this the \_\_\_\_\_ day of \_\_\_\_\_, 2015.

BY: \_\_\_\_\_  
Commissioner of Public Works

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by:

\_\_\_\_\_  
(Company Name)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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

**DOCUMENT 001141  
NOTICE TO PROCEED**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

Project: \_\_\_\_\_

You are hereby notified to commence WORK on or before \_\_\_\_\_

In accordance with contract documents the contract time is 150 calendar days. The date for completion of all work is therefore \_\_\_\_\_.

BY:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

\_\_\_\_\_  
(Company Name)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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

Title: \_\_\_\_\_

**DOCUMENT 001142  
PREVAILING WAGE RATES**

**GENERAL**

Contractor shall comply with The Massachusetts Prevailing Wage Law for public works projects G.L. c. 149, §§ 26 - 27 ("The Prevailing Wage Law") which establishes minimum wage rates for workers on public construction projects.

**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](http://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 \_\_\_\_\_



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

**Awarding Authority:** City of Quincy  
**Contract Number:** **City/Town:** QUINCY  
**Description of Work:** Lighting & Security Cameras at Hancock Cemetery includes but not limited to: provide pedestrian pole mounted lighting & pole mounted security cameras on precast concrete w/conduit wiring & Connection  
**Job Location:** Hancock Street, Quincy

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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
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2014	\$32.40	\$9.91	\$9.33	\$0.00	\$51.64
	06/01/2015	\$32.75	\$9.91	\$9.33	\$0.00	\$51.99
	08/01/2015	\$32.75	\$10.41	\$9.33	\$0.00	\$52.49
	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>	12/01/2014	\$32.47	\$9.91	\$9.33	\$0.00	\$51.71
	06/01/2015	\$32.82	\$9.91	\$9.33	\$0.00	\$52.06
	08/01/2015	\$32.82	\$10.41	\$9.33	\$0.00	\$52.56
	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>	12/01/2014	\$32.59	\$9.91	\$9.33	\$0.00	\$51.83
	06/01/2015	\$32.94	\$9.91	\$9.33	\$0.00	\$52.18
	08/01/2015	\$32.94	\$10.41	\$9.33	\$0.00	\$52.68
	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>	08/01/2014	\$87.36	\$9.80	\$18.17	\$0.00	\$115.33
	08/01/2015	\$90.51	\$9.80	\$18.17	\$0.00	\$118.48
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	06/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	12/01/2015	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	06/01/2016	\$37.60	\$7.30	\$12.95	\$0.00	\$57.85
	12/01/2016	\$38.60	\$7.30	\$12.95	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2014	\$32.48	\$10.40	\$5.95	\$0.00	\$48.83
	06/01/2015	\$33.43	\$10.40	\$5.95	\$0.00	\$49.78
	12/01/2015	\$34.38	\$10.40	\$5.95	\$0.00	\$50.73
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	06/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	12/01/2015	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	06/01/2016	\$37.60	\$7.30	\$12.95	\$0.00	\$57.85
	12/01/2016	\$38.60	\$7.30	\$12.95	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2010	\$37.70	\$6.97	\$11.18	\$0.00	\$55.85

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2010**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
2	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
3	70	\$26.39	\$6.97	\$11.18	\$0.00	\$44.54
4	75	\$28.28	\$6.97	\$11.18	\$0.00	\$46.43
5	80	\$30.16	\$6.97	\$11.18	\$0.00	\$48.31
6	85	\$32.05	\$6.97	\$11.18	\$0.00	\$50.20
7	90	\$33.93	\$6.97	\$11.18	\$0.00	\$52.08
8	95	\$35.82	\$6.97	\$11.18	\$0.00	\$53.97

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (QUINCY)</i>	02/01/2015	\$48.96	\$10.18	\$18.50	\$0.00	\$77.64
	08/01/2015	\$49.86	\$10.18	\$18.57	\$0.00	\$78.61
	02/01/2016	\$50.43	\$10.18	\$18.57	\$0.00	\$79.18
	08/01/2016	\$51.33	\$10.18	\$18.65	\$0.00	\$80.16
	02/01/2017	\$51.90	\$10.18	\$18.65	\$0.00	\$80.73

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Quincy**

**Effective Date - 02/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.48	\$10.18	\$18.50	\$0.00	\$53.16
2	60	\$29.38	\$10.18	\$18.50	\$0.00	\$58.06
3	70	\$34.27	\$10.18	\$18.50	\$0.00	\$62.95
4	80	\$39.17	\$10.18	\$18.50	\$0.00	\$67.85
5	90	\$44.06	\$10.18	\$18.50	\$0.00	\$72.74

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.93	\$10.18	\$18.57	\$0.00	\$53.68
2	60	\$29.92	\$10.18	\$18.57	\$0.00	\$58.67
3	70	\$34.90	\$10.18	\$18.57	\$0.00	\$63.65
4	80	\$39.89	\$10.18	\$18.57	\$0.00	\$68.64
5	90	\$44.87	\$10.18	\$18.57	\$0.00	\$73.62

**Notes:**

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**Apprentice to Journeyworker Ratio:1:5**

<b>BULLDOZER/GRADER/SCRAPER</b>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b>	12/01/2014	\$35.70	\$7.30	\$13.15	\$0.00	\$56.15
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2015	\$36.45	\$7.30	\$13.15	\$0.00	\$56.90
	12/01/2015	\$37.20	\$7.30	\$13.15	\$0.00	\$57.65
	06/01/2016	\$37.95	\$7.30	\$13.15	\$0.00	\$58.40
	12/01/2016	\$38.95	\$7.30	\$13.15	\$0.00	\$59.40

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b>	12/01/2014	\$34.55	\$7.30	\$13.15	\$0.00	\$55.00
<i>LABORERS - FOUNDATION AND MARINE</i>	06/01/2015	\$35.30	\$7.30	\$13.15	\$0.00	\$55.75
	12/01/2015	\$36.05	\$7.30	\$13.15	\$0.00	\$56.50
	06/01/2016	\$36.80	\$7.30	\$13.15	\$0.00	\$57.25
	12/01/2016	\$37.80	\$7.30	\$13.15	\$0.00	\$58.25

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$34.55	\$7.30	\$13.15	\$0.00	\$55.00
	06/01/2015	\$35.30	\$7.30	\$13.15	\$0.00	\$55.75
	12/01/2015	\$36.05	\$7.30	\$13.15	\$0.00	\$56.50
	06/01/2016	\$36.80	\$7.30	\$13.15	\$0.00	\$57.25
	12/01/2016	\$37.80	\$7.30	\$13.15	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2015	\$35.75	\$9.80	\$16.48	\$0.00	\$62.03

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 03/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.88	\$9.80	\$1.63	\$0.00	\$29.31
2	60	\$21.45	\$9.80	\$1.63	\$0.00	\$32.88
3	70	\$25.03	\$9.80	\$11.59	\$0.00	\$46.42
4	75	\$26.81	\$9.80	\$11.59	\$0.00	\$48.20
5	80	\$28.60	\$9.80	\$13.22	\$0.00	\$51.62
6	80	\$28.60	\$9.80	\$13.22	\$0.00	\$51.62
7	90	\$32.18	\$9.80	\$14.85	\$0.00	\$56.83
8	90	\$32.18	\$9.80	\$14.85	\$0.00	\$56.83

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING <i>BRICKLAYERS LOCAL 3 (QUINCY)</i>	01/01/2015	\$44.90	\$10.90	\$18.71	\$1.30	\$75.81
	07/01/2015	\$45.82	\$10.90	\$18.71	\$1.30	\$76.73
	01/01/2016	\$46.44	\$10.90	\$18.71	\$1.30	\$77.35

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Quincy)**

**Effective Date - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.45	\$10.90	\$12.21	\$1.30	\$46.86
2	60	\$26.94	\$10.90	\$13.71	\$1.30	\$52.85
3	65	\$29.19	\$10.90	\$14.71	\$1.30	\$56.10
4	70	\$31.43	\$10.90	\$15.71	\$1.30	\$59.34
5	75	\$33.68	\$10.90	\$16.71	\$1.30	\$62.59
6	80	\$35.92	\$10.90	\$17.71	\$1.30	\$65.83
7	90	\$40.41	\$10.90	\$18.71	\$1.30	\$71.32

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.91	\$10.90	\$12.21	\$1.30	\$47.32
2	60	\$27.49	\$10.90	\$13.71	\$1.30	\$53.40
3	65	\$29.78	\$10.90	\$14.71	\$1.30	\$56.69
4	70	\$32.07	\$10.90	\$15.71	\$1.30	\$59.98
5	75	\$34.37	\$10.90	\$16.71	\$1.30	\$63.28
6	80	\$36.66	\$10.90	\$17.71	\$1.30	\$66.57
7	90	\$41.24	\$10.90	\$18.71	\$1.30	\$72.15

**Notes:**

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

**Apprentice to Journeyworker Ratio:1:3**

CHAIN SAW OPERATOR	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
LABORERS - ZONE 1	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	12/01/2014	\$43.39	\$10.00	\$14.30	\$0.00	\$67.69
OPERATING ENGINEERS LOCAL 4	06/01/2015	\$44.14	\$10.00	\$14.30	\$0.00	\$68.44
	12/01/2015	\$45.39	\$10.00	\$14.30	\$0.00	\$69.69
	06/01/2016	\$46.14	\$10.00	\$14.30	\$0.00	\$70.44
	12/01/2016	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	06/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69
	12/01/2017	\$49.39	\$10.00	\$14.30	\$0.00	\$73.69

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>	12/01/2014	\$29.40	\$10.00	\$14.30	\$0.00	\$53.70
	06/01/2015	\$29.92	\$10.00	\$14.30	\$0.00	\$54.22
	12/01/2015	\$30.79	\$10.00	\$14.30	\$0.00	\$55.09
	06/01/2016	\$31.31	\$10.00	\$14.30	\$0.00	\$55.61
	12/01/2016	\$32.18	\$10.00	\$14.30	\$0.00	\$56.48
	06/01/2017	\$32.87	\$10.00	\$14.30	\$0.00	\$57.17
	12/01/2017	\$33.56	\$10.00	\$14.30	\$0.00	\$57.86

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2015	\$47.66	\$7.85	\$16.10	\$0.00	\$71.61
	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	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 - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.83	\$7.85	\$0.00	\$0.00	\$31.68
2	55	\$26.21	\$7.85	\$3.66	\$0.00	\$37.72
3	60	\$28.60	\$7.85	\$3.99	\$0.00	\$40.44
4	65	\$30.98	\$7.85	\$4.32	\$0.00	\$43.15
5	70	\$33.36	\$7.85	\$14.11	\$0.00	\$55.32
6	75	\$35.75	\$7.85	\$14.44	\$0.00	\$58.04
7	80	\$38.13	\$7.85	\$14.77	\$0.00	\$60.75
8	90	\$42.89	\$7.85	\$15.44	\$0.00	\$66.18

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.28	\$7.85	\$0.00	\$0.00	\$32.13
2	55	\$26.71	\$7.85	\$3.66	\$0.00	\$38.22
3	60	\$29.14	\$7.85	\$3.99	\$0.00	\$40.98
4	65	\$31.56	\$7.85	\$4.32	\$0.00	\$43.73
5	70	\$33.99	\$7.85	\$14.11	\$0.00	\$55.95
6	75	\$36.42	\$7.85	\$14.44	\$0.00	\$58.71
7	80	\$38.85	\$7.85	\$14.77	\$0.00	\$61.47
8	90	\$43.70	\$7.85	\$15.44	\$0.00	\$66.99

**Notes:**

Steps are 750 hrs.

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

DEMO: ADZEMAN <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.75	\$7.30	\$12.95	\$0.00	\$55.00
	06/01/2015	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	12/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.75	\$7.30	\$12.95	\$0.00	\$56.00
	06/01/2015	\$36.50	\$7.30	\$12.95	\$0.00	\$56.75
	12/01/2015	\$37.25	\$7.30	\$12.95	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	06/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
	12/01/2015	\$37.00	\$7.30	\$12.95	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.75	\$7.30	\$12.95	\$0.00	\$56.00
	06/01/2015	\$36.50	\$7.30	\$12.95	\$0.00	\$56.75
	12/01/2015	\$37.25	\$7.30	\$12.95	\$0.00	\$57.50
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	06/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
	12/01/2015	\$37.00	\$7.30	\$12.95	\$0.00	\$57.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.75	\$7.30	\$12.95	\$0.00	\$55.00
	06/01/2015	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	12/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2014	\$58.24	\$9.80	\$18.17	\$0.00	\$86.21
	08/01/2015	\$60.34	\$9.80	\$18.17	\$0.00	\$88.31
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
	08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2014	\$62.40	\$9.80	\$18.17	\$0.00	\$90.37
	08/01/2015	\$64.65	\$9.80	\$18.17	\$0.00	\$92.62
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2014	\$87.36	\$9.80	\$18.17	\$0.00	\$115.33
	08/01/2015	\$90.51	\$9.80	\$18.17	\$0.00	\$118.48
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	03/01/2015	\$45.17	\$13.00	\$15.40	\$0.00	\$73.57
	09/01/2015	\$46.13	\$13.00	\$15.43	\$0.00	\$74.56
	03/01/2016	\$47.08	\$13.00	\$15.46	\$0.00	\$75.54
For apprentice rates see "Apprentice- ELECTRICIAN"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2015	\$45.17	\$13.00	\$15.40	\$0.00	\$73.57
	09/01/2015	\$46.13	\$13.00	\$15.43	\$0.00	\$74.56
	03/01/2016	\$47.08	\$13.00	\$15.46	\$0.00	\$75.54

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ELECTRICIAN - Local 103**

**Effective Date - 03/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.07	\$13.00	\$0.54	\$0.00	\$31.61
2	40	\$18.07	\$13.00	\$0.54	\$0.00	\$31.61
3	45	\$20.33	\$13.00	\$11.64	\$0.00	\$44.97
4	45	\$20.33	\$13.00	\$11.64	\$0.00	\$44.97
5	50	\$22.59	\$13.00	\$11.98	\$0.00	\$47.57
6	55	\$24.84	\$13.00	\$12.33	\$0.00	\$50.17
7	60	\$27.10	\$13.00	\$12.66	\$0.00	\$52.76
8	65	\$29.36	\$13.00	\$13.01	\$0.00	\$55.37
9	70	\$31.62	\$13.00	\$13.35	\$0.00	\$57.97
10	75	\$33.88	\$13.00	\$13.70	\$0.00	\$60.58

**Effective Date - 09/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.45	\$13.00	\$0.55	\$0.00	\$32.00
2	40	\$18.45	\$13.00	\$0.55	\$0.00	\$32.00
3	45	\$20.76	\$13.00	\$11.65	\$0.00	\$45.41
4	45	\$20.76	\$13.00	\$11.65	\$0.00	\$45.41
5	50	\$23.07	\$13.00	\$11.99	\$0.00	\$48.06
6	55	\$25.37	\$13.00	\$12.34	\$0.00	\$50.71
7	60	\$27.68	\$13.00	\$12.68	\$0.00	\$53.36
8	65	\$29.98	\$13.00	\$13.03	\$0.00	\$56.01
9	70	\$32.29	\$13.00	\$13.37	\$0.00	\$58.66
10	75	\$34.60	\$13.00	\$13.72	\$0.00	\$61.32

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

**Apprentice to Journeyworker Ratio:2:3\*\*\***

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2012	\$52.45	\$8.78	\$6.96	\$0.00	\$68.19
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**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ELEVATOR CONSTRUCTOR - Local 4**

**Effective Date - 01/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.23	\$8.78	\$0.00	\$0.00	\$35.01
2	55	\$28.85	\$8.78	\$6.96	\$0.00	\$44.59
3	65	\$34.09	\$8.78	\$6.96	\$0.00	\$49.83
4	70	\$36.72	\$8.78	\$6.96	\$0.00	\$52.46
5	80	\$41.96	\$8.78	\$6.96	\$0.00	\$57.70

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

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

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2012	\$38.59	\$8.78	\$6.96	\$0.00	\$54.33
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2014	\$39.59	\$10.00	\$14.18	\$0.00	\$63.77
	05/01/2015	\$40.32	\$10.00	\$14.18	\$0.00	\$64.50
	11/01/2015	\$40.90	\$10.00	\$14.18	\$0.00	\$65.08
	05/01/2016	\$41.79	\$10.00	\$14.18	\$0.00	\$65.97
	11/01/2016	\$42.38	\$10.00	\$14.18	\$0.00	\$66.56
	05/01/2017	\$43.26	\$10.00	\$14.18	\$0.00	\$67.44
	11/01/2017	\$43.99	\$10.00	\$14.18	\$0.00	\$68.17
	05/01/2018	\$44.70	\$10.00	\$14.18	\$0.00	\$68.88

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2014	\$41.02	\$10.00	\$14.18	\$0.00	\$65.20
	05/01/2015	\$41.75	\$10.00	\$14.18	\$0.00	\$65.93
	11/01/2015	\$42.34	\$10.00	\$14.18	\$0.00	\$66.52
	05/01/2016	\$43.23	\$10.00	\$14.18	\$0.00	\$67.41
	11/01/2016	\$43.83	\$10.00	\$14.18	\$0.00	\$68.01
	05/01/2017	\$44.72	\$10.00	\$14.18	\$0.00	\$68.90
	11/01/2017	\$45.45	\$10.00	\$14.18	\$0.00	\$69.63
	05/01/2018	\$46.17	\$10.00	\$14.18	\$0.00	\$70.35

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>	11/01/2014	\$21.35	\$10.00	\$14.18	\$0.00	\$45.53
	05/01/2015	\$21.78	\$10.00	\$14.18	\$0.00	\$45.96
	11/01/2015	\$22.12	\$10.00	\$14.18	\$0.00	\$46.30
	05/01/2016	\$22.64	\$10.00	\$14.18	\$0.00	\$46.82
	11/01/2016	\$22.99	\$10.00	\$14.18	\$0.00	\$47.17
	05/01/2017	\$23.52	\$10.00	\$14.18	\$0.00	\$47.70
	11/01/2017	\$23.94	\$10.00	\$14.18	\$0.00	\$48.12
	05/01/2018	\$24.37	\$10.00	\$14.18	\$0.00	\$48.55
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2015	\$45.17	\$13.00	\$15.40	\$0.00	\$73.57
	09/01/2015	\$46.13	\$13.00	\$15.43	\$0.00	\$74.56
	03/01/2016	\$47.08	\$13.00	\$15.46	\$0.00	\$75.54
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 103</i>	03/01/2015	\$33.88	\$13.00	\$13.70	\$0.00	\$60.58
	09/01/2015	\$34.60	\$13.00	\$13.72	\$0.00	\$61.32
	03/01/2016	\$35.31	\$13.00	\$13.74	\$0.00	\$62.05
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$35.33	\$10.00	\$14.30	\$0.00	\$59.63
	06/01/2015	\$35.95	\$10.00	\$14.30	\$0.00	\$60.25
	12/01/2015	\$37.00	\$10.00	\$14.30	\$0.00	\$61.30
	06/01/2016	\$37.62	\$10.00	\$14.30	\$0.00	\$61.92
	12/01/2016	\$38.66	\$10.00	\$14.30	\$0.00	\$62.96
	06/01/2017	\$39.50	\$10.00	\$14.30	\$0.00	\$63.80
	12/01/2017	\$40.33	\$10.00	\$14.30	\$0.00	\$64.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 1</i>	12/01/2014	\$20.50	\$7.30	\$12.95	\$0.00	\$40.75
	06/01/2015	\$20.50	\$7.30	\$12.95	\$0.00	\$40.75
	12/01/2015	\$20.50	\$7.30	\$12.95	\$0.00	\$40.75
	06/01/2016	\$20.50	\$7.30	\$12.95	\$0.00	\$40.75
	12/01/2016	\$20.50	\$7.30	\$12.95	\$0.00	\$40.75
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	09/01/2014	\$40.40	\$9.80	\$17.21	\$0.00	\$67.41

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - FLOORCOVERER - Local 2168 Zone I**

**Effective Date - 09/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.20	\$9.80	\$1.79	\$0.00	\$31.79
2	55	\$22.22	\$9.80	\$1.79	\$0.00	\$33.81
3	60	\$24.24	\$9.80	\$11.84	\$0.00	\$45.88
4	65	\$26.26	\$9.80	\$11.84	\$0.00	\$47.90
5	70	\$28.28	\$9.80	\$13.63	\$0.00	\$51.71
6	75	\$30.30	\$9.80	\$13.63	\$0.00	\$53.73
7	80	\$32.32	\$9.80	\$15.42	\$0.00	\$57.54
8	85	\$34.34	\$9.80	\$15.42	\$0.00	\$59.56

**Notes:**

Steps are 750 hrs.

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

<b>FORK LIFT/CHERRY PICKER</b>	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>GENERATOR/LIGHTING PLANT/HEATERS</b>	12/01/2014	\$29.40	\$10.00	\$14.30	\$0.00	\$53.70
<i>OPERATING ENGINEERS LOCAL 4</i>	06/01/2015	\$29.92	\$10.00	\$14.30	\$0.00	\$54.22
	12/01/2015	\$30.79	\$10.00	\$14.30	\$0.00	\$55.09
	06/01/2016	\$31.31	\$10.00	\$14.30	\$0.00	\$55.61
	12/01/2016	\$32.18	\$10.00	\$14.30	\$0.00	\$56.48
	06/01/2017	\$32.87	\$10.00	\$14.30	\$0.00	\$57.17
	12/01/2017	\$33.56	\$10.00	\$14.30	\$0.00	\$57.86

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)</b>	01/01/2015	\$37.16	\$7.85	\$16.10	\$0.00	\$61.11
<i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2015	\$38.06	\$7.85	\$16.10	\$0.00	\$62.01
	01/01/2016	\$39.01	\$7.85	\$16.10	\$0.00	\$62.96
	07/01/2016	\$39.96	\$7.85	\$16.10	\$0.00	\$63.91
	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86

**Apprentice - GLAZIER - Local 35 Zone 2**

**Effective Date - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.58	\$7.85	\$0.00	\$0.00	\$26.43
2	55	\$20.44	\$7.85	\$3.66	\$0.00	\$31.95
3	60	\$22.30	\$7.85	\$3.99	\$0.00	\$34.14
4	65	\$24.15	\$7.85	\$4.32	\$0.00	\$36.32
5	70	\$26.01	\$7.85	\$14.11	\$0.00	\$47.97
6	75	\$27.87	\$7.85	\$14.44	\$0.00	\$50.16
7	80	\$29.73	\$7.85	\$14.77	\$0.00	\$52.35
8	90	\$33.44	\$7.85	\$15.44	\$0.00	\$56.73

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.03	\$7.85	\$0.00	\$0.00	\$26.88
2	55	\$20.93	\$7.85	\$3.66	\$0.00	\$32.44
3	60	\$22.84	\$7.85	\$3.99	\$0.00	\$34.68
4	65	\$24.74	\$7.85	\$4.32	\$0.00	\$36.91
5	70	\$26.64	\$7.85	\$14.11	\$0.00	\$48.60
6	75	\$28.55	\$7.85	\$14.44	\$0.00	\$50.84
7	80	\$30.45	\$7.85	\$14.77	\$0.00	\$53.07
8	90	\$34.25	\$7.85	\$15.44	\$0.00	\$57.54

**Notes:**

Steps are 750 hrs.

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

HOISTING ENGINEER/CRANES/GRADALLS	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
OPERATING ENGINEERS LOCAL 4	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 12/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.31	\$10.00	\$0.00	\$0.00	\$33.31
2	60	\$25.43	\$10.00	\$14.30	\$0.00	\$49.73
3	65	\$27.55	\$10.00	\$14.30	\$0.00	\$51.85
4	70	\$29.67	\$10.00	\$14.30	\$0.00	\$53.97
5	75	\$31.79	\$10.00	\$14.30	\$0.00	\$56.09
6	80	\$33.91	\$10.00	\$14.30	\$0.00	\$58.21
7	85	\$36.03	\$10.00	\$14.30	\$0.00	\$60.33
8	90	\$38.15	\$10.00	\$14.30	\$0.00	\$62.45

**Effective Date - 06/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.73	\$10.00	\$0.00	\$0.00	\$33.73
2	60	\$25.88	\$10.00	\$14.30	\$0.00	\$50.18
3	65	\$28.04	\$10.00	\$14.30	\$0.00	\$52.34
4	70	\$30.20	\$10.00	\$14.30	\$0.00	\$54.50
5	75	\$32.36	\$10.00	\$14.30	\$0.00	\$56.66
6	80	\$34.51	\$10.00	\$14.30	\$0.00	\$58.81
7	85	\$36.67	\$10.00	\$14.30	\$0.00	\$60.97
8	90	\$38.83	\$10.00	\$14.30	\$0.00	\$63.13

**Notes:**

**Apprentice to Journeyworker Ratio:1:6**

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 17 - A	02/01/2015	\$43.69	\$9.82	\$20.54	\$2.19	\$76.24
	08/01/2015	\$44.69	\$9.82	\$20.54	\$2.19	\$77.24
	02/01/2016	\$45.69	\$9.82	\$20.54	\$2.19	\$78.24
	08/01/2016	\$46.84	\$9.82	\$20.54	\$2.19	\$79.39
	02/01/2017	\$47.94	\$9.82	\$20.54	\$2.19	\$80.49
	08/01/2017	\$49.04	\$9.82	\$20.54	\$2.19	\$81.59
	02/01/2018	\$50.19	\$9.82	\$20.54	\$2.19	\$82.74

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 103	03/01/2015	\$45.17	\$13.00	\$15.40	\$0.00	\$73.57
	09/01/2015	\$46.13	\$13.00	\$15.43	\$0.00	\$74.56
	03/01/2016	\$47.08	\$13.00	\$15.46	\$0.00	\$75.54

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>	02/01/2015	\$43.69	\$9.82	\$20.54	\$2.19	\$76.24
	08/01/2015	\$44.69	\$9.82	\$20.54	\$2.19	\$77.24
	02/01/2016	\$45.69	\$9.82	\$20.54	\$2.19	\$78.24
	08/01/2016	\$46.84	\$9.82	\$20.54	\$2.19	\$79.39
	02/01/2017	\$47.94	\$9.82	\$20.54	\$2.19	\$80.49
	08/01/2017	\$49.04	\$9.82	\$20.54	\$2.19	\$81.59
	02/01/2018	\$50.19	\$9.82	\$20.54	\$2.19	\$82.74
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2015	\$49.69	\$9.20	\$16.64	\$0.00	\$75.53
	09/01/2015	\$50.69	\$9.20	\$16.64	\$0.00	\$76.53
	03/01/2016	\$51.69	\$9.20	\$16.64	\$0.00	\$77.53
	09/01/2016	\$52.69	\$9.20	\$16.64	\$0.00	\$78.53
	03/01/2017	\$53.69	\$9.20	\$16.64	\$0.00	\$79.53
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2015	\$49.69	\$9.20	\$16.64	\$0.00	\$75.53
	09/01/2015	\$50.69	\$9.20	\$16.64	\$0.00	\$76.53
	03/01/2016	\$51.69	\$9.20	\$16.64	\$0.00	\$77.53
	09/01/2016	\$52.69	\$9.20	\$16.64	\$0.00	\$78.53
	03/01/2017	\$53.69	\$9.20	\$16.64	\$0.00	\$79.53
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2014	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	06/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	12/01/2015	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	06/01/2016	\$37.60	\$7.30	\$12.95	\$0.00	\$57.85
	12/01/2016	\$38.60	\$7.30	\$12.95	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2014	\$43.31	\$11.25	\$12.60	\$0.00	\$67.16

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

**Effective Date - 09/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.66	\$11.25	\$9.35	\$0.00	\$42.26
2	60	\$25.99	\$11.25	\$10.00	\$0.00	\$47.24
3	70	\$30.32	\$11.25	\$10.65	\$0.00	\$52.22
4	80	\$34.65	\$11.25	\$11.30	\$0.00	\$57.20

**Notes:**

Steps are 1 year

**Apprentice to Journeyworker Ratio:1:4**

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	03/16/2014	\$41.19	\$7.70	\$19.25	\$0.00	\$68.14
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**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - IRONWORKER - Local 7 Boston**

**Effective Date - 03/16/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.71	\$7.70	\$19.25	\$0.00	\$51.66
2	70	\$28.83	\$7.70	\$19.25	\$0.00	\$55.78
3	75	\$30.89	\$7.70	\$19.25	\$0.00	\$57.84
4	80	\$32.95	\$7.70	\$19.25	\$0.00	\$59.90
5	85	\$35.01	\$7.70	\$19.25	\$0.00	\$61.96
6	90	\$37.07	\$7.70	\$19.25	\$0.00	\$64.02

**Notes:**

\*\* Structural 1:6; Ornamental 1:4

**Apprentice to Journeyworker Ratio:\*\***

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 1	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 1	12/01/2014	\$34.60	\$7.30	\$12.95	\$0.00	\$54.85
	06/01/2015	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	12/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	06/01/2016	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	12/01/2016	\$37.85	\$7.30	\$12.95	\$0.00	\$58.10

**Apprentice - LABORER - Zone 1**

**Effective Date - 12/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$20.76	\$7.30	\$12.95	\$0.00	\$41.01
2	70	\$24.22	\$7.30	\$12.95	\$0.00	\$44.47
3	80	\$27.68	\$7.30	\$12.95	\$0.00	\$47.93
4	90	\$31.14	\$7.30	\$12.95	\$0.00	\$51.39

**Effective Date - 06/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.21	\$7.30	\$12.95	\$0.00	\$41.46
2	70	\$24.75	\$7.30	\$12.95	\$0.00	\$45.00
3	80	\$28.28	\$7.30	\$12.95	\$0.00	\$48.53
4	90	\$31.82	\$7.30	\$12.95	\$0.00	\$52.07

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.60	\$7.30	\$12.95	\$0.00	\$54.85
	06/01/2015	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	12/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	06/01/2016	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	12/01/2016	\$37.85	\$7.30	\$12.95	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.60	\$7.30	\$12.95	\$0.00	\$54.85
	06/01/2015	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	12/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	06/01/2016	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	12/01/2016	\$37.85	\$7.30	\$12.95	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.75	\$7.30	\$12.95	\$0.00	\$55.00
	06/01/2015	\$35.50	\$7.30	\$12.95	\$0.00	\$55.75
	12/01/2015	\$36.25	\$7.30	\$12.95	\$0.00	\$56.50
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.60	\$7.30	\$12.95	\$0.00	\$54.85
	06/01/2015	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	12/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	06/01/2016	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	12/01/2016	\$37.85	\$7.30	\$12.95	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.60	\$7.30	\$12.95	\$0.00	\$54.85
	06/01/2015	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	12/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	06/01/2016	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	12/01/2016	\$37.85	\$7.30	\$12.95	\$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 <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2015	\$37.37	\$10.18	\$17.18	\$0.00	\$64.73
	08/01/2015	\$38.08	\$10.18	\$17.25	\$0.00	\$65.51
	02/01/2016	\$38.53	\$10.18	\$17.25	\$0.00	\$65.96
	08/01/2016	\$39.23	\$10.18	\$17.33	\$0.00	\$66.74
	02/01/2017	\$39.69	\$10.18	\$17.33	\$0.00	\$67.20

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

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

**Effective Date - 02/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.69	\$10.18	\$17.18	\$0.00	\$46.05
2	60	\$22.42	\$10.18	\$17.18	\$0.00	\$49.78
3	70	\$26.16	\$10.18	\$17.18	\$0.00	\$53.52
4	80	\$29.90	\$10.18	\$17.18	\$0.00	\$57.26
5	90	\$33.63	\$10.18	\$17.18	\$0.00	\$60.99

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.04	\$10.18	\$17.25	\$0.00	\$46.47
2	60	\$22.85	\$10.18	\$17.25	\$0.00	\$50.28
3	70	\$26.66	\$10.18	\$17.25	\$0.00	\$54.09
4	80	\$30.46	\$10.18	\$17.25	\$0.00	\$57.89
5	90	\$34.27	\$10.18	\$17.25	\$0.00	\$61.70

**Notes:**

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**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	02/01/2015	\$49.00	\$10.18	\$18.50	\$0.00	\$77.68
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2015	\$49.90	\$10.18	\$18.57	\$0.00	\$78.65
	02/01/2016	\$50.47	\$10.18	\$18.57	\$0.00	\$79.22
	08/01/2016	\$51.37	\$10.18	\$18.65	\$0.00	\$80.20
	02/01/2017	\$51.94	\$10.18	\$18.65	\$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 - 02/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.50	\$10.18	\$18.50	\$0.00	\$53.18
2	60	\$29.40	\$10.18	\$18.50	\$0.00	\$58.08
3	70	\$34.30	\$10.18	\$18.50	\$0.00	\$62.98
4	80	\$39.20	\$10.18	\$18.50	\$0.00	\$67.88
5	90	\$44.10	\$10.18	\$18.50	\$0.00	\$72.78

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.95	\$10.18	\$18.57	\$0.00	\$53.70
2	60	\$29.94	\$10.18	\$18.57	\$0.00	\$58.69
3	70	\$34.93	\$10.18	\$18.57	\$0.00	\$63.68
4	80	\$39.92	\$10.18	\$18.57	\$0.00	\$68.67
5	90	\$44.91	\$10.18	\$18.57	\$0.00	\$73.66

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	10/01/2014	\$36.68	\$9.80	\$16.21	\$0.00	\$62.69
	04/01/2015	\$37.64	\$9.80	\$16.21	\$0.00	\$63.65

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - MILLWRIGHT - Local 1121 Zone 1**

**Effective Date - 10/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$20.17	\$9.80	\$4.48	\$0.00	\$34.45
2	65	\$23.84	\$9.80	\$13.36	\$0.00	\$47.00
3	75	\$27.51	\$9.80	\$14.18	\$0.00	\$51.49
4	85	\$31.18	\$9.80	\$14.99	\$0.00	\$55.97

**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 LABORERS - ZONE 1	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2014	\$21.90	\$10.00	\$14.30	\$0.00	\$46.20
	06/01/2015	\$22.28	\$10.00	\$14.30	\$0.00	\$46.58
	12/01/2015	\$22.93	\$10.00	\$14.30	\$0.00	\$47.23
	06/01/2016	\$23.32	\$10.00	\$14.30	\$0.00	\$47.62
	12/01/2016	\$23.97	\$10.00	\$14.30	\$0.00	\$48.27
	06/01/2017	\$24.48	\$10.00	\$14.30	\$0.00	\$48.78
	12/01/2017	\$25.00	\$10.00	\$14.30	\$0.00	\$49.30

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2014	\$25.54	\$10.00	\$14.30	\$0.00	\$49.84
	06/01/2015	\$25.99	\$10.00	\$14.30	\$0.00	\$50.29
	12/01/2015	\$26.74	\$10.00	\$14.30	\$0.00	\$51.04
	06/01/2016	\$27.20	\$10.00	\$14.30	\$0.00	\$51.50
	12/01/2016	\$27.95	\$10.00	\$14.30	\$0.00	\$52.25
	06/01/2017	\$28.55	\$10.00	\$14.30	\$0.00	\$52.85
	12/01/2017	\$29.16	\$10.00	\$14.30	\$0.00	\$53.46

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2015	\$47.66	\$7.85	\$16.10	\$0.00	\$71.61
	07/01/2015	\$48.56	\$7.85	\$16.10	\$0.00	\$72.51
	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 - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.83	\$7.85	\$0.00	\$0.00	\$31.68
2	55	\$26.21	\$7.85	\$3.66	\$0.00	\$37.72
3	60	\$28.60	\$7.85	\$3.99	\$0.00	\$40.44
4	65	\$30.98	\$7.85	\$4.32	\$0.00	\$43.15
5	70	\$33.36	\$7.85	\$14.11	\$0.00	\$55.32
6	75	\$35.75	\$7.85	\$14.44	\$0.00	\$58.04
7	80	\$38.13	\$7.85	\$14.77	\$0.00	\$60.75
8	90	\$42.89	\$7.85	\$15.44	\$0.00	\$66.18

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.28	\$7.85	\$0.00	\$0.00	\$32.13
2	55	\$26.71	\$7.85	\$3.66	\$0.00	\$38.22
3	60	\$29.14	\$7.85	\$3.99	\$0.00	\$40.98
4	65	\$31.56	\$7.85	\$4.32	\$0.00	\$43.73
5	70	\$33.99	\$7.85	\$14.11	\$0.00	\$55.95
6	75	\$36.42	\$7.85	\$14.44	\$0.00	\$58.71
7	80	\$38.85	\$7.85	\$14.77	\$0.00	\$61.47
8	90	\$43.70	\$7.85	\$15.44	\$0.00	\$66.99

**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. <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2015	\$38.56	\$7.85	\$16.10	\$0.00	\$62.51
	07/01/2015	\$39.46	\$7.85	\$16.10	\$0.00	\$63.41
	01/01/2016	\$40.41	\$7.85	\$16.10	\$0.00	\$64.36
	07/01/2016	\$41.36	\$7.85	\$16.10	\$0.00	\$65.31
	01/01/2017	\$42.31	\$7.85	\$16.10	\$0.00	\$66.26

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New**

**Effective Date - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.28	\$7.85	\$0.00	\$0.00	\$27.13
2	55	\$21.21	\$7.85	\$3.66	\$0.00	\$32.72
3	60	\$23.14	\$7.85	\$3.99	\$0.00	\$34.98
4	65	\$25.06	\$7.85	\$4.32	\$0.00	\$37.23
5	70	\$26.99	\$7.85	\$14.11	\$0.00	\$48.95
6	75	\$28.92	\$7.85	\$14.44	\$0.00	\$51.21
7	80	\$30.85	\$7.85	\$14.77	\$0.00	\$53.47
8	90	\$34.70	\$7.85	\$15.44	\$0.00	\$57.99

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.73	\$7.85	\$0.00	\$0.00	\$27.58
2	55	\$21.70	\$7.85	\$3.66	\$0.00	\$33.21
3	60	\$23.68	\$7.85	\$3.99	\$0.00	\$35.52
4	65	\$25.65	\$7.85	\$4.32	\$0.00	\$37.82
5	70	\$27.62	\$7.85	\$14.11	\$0.00	\$49.58
6	75	\$29.60	\$7.85	\$14.44	\$0.00	\$51.89
7	80	\$31.57	\$7.85	\$14.77	\$0.00	\$54.19
8	90	\$35.51	\$7.85	\$15.44	\$0.00	\$58.80

**Notes:**

Steps are 750 hrs.

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

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2015	\$36.62	\$7.85	\$16.10	\$0.00	\$60.57
PAINTERS LOCAL 35 - ZONE 2	07/01/2015	\$37.52	\$7.85	\$16.10	\$0.00	\$61.47
	01/01/2016	\$38.47	\$7.85	\$16.10	\$0.00	\$62.42
	07/01/2016	\$39.42	\$7.85	\$16.10	\$0.00	\$63.37
	01/01/2017	\$40.37	\$7.85	\$16.10	\$0.00	\$64.32

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

**Effective Date - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.31	\$7.85	\$0.00	\$0.00	\$26.16
2	55	\$20.14	\$7.85	\$3.66	\$0.00	\$31.65
3	60	\$21.97	\$7.85	\$3.99	\$0.00	\$33.81
4	65	\$23.80	\$7.85	\$4.32	\$0.00	\$35.97
5	70	\$25.63	\$7.85	\$14.11	\$0.00	\$47.59
6	75	\$27.47	\$7.85	\$14.44	\$0.00	\$49.76
7	80	\$29.30	\$7.85	\$14.77	\$0.00	\$51.92
8	90	\$32.96	\$7.85	\$15.44	\$0.00	\$56.25

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.76	\$7.85	\$0.00	\$0.00	\$26.61
2	55	\$20.64	\$7.85	\$3.66	\$0.00	\$32.15
3	60	\$22.51	\$7.85	\$3.99	\$0.00	\$34.35
4	65	\$24.39	\$7.85	\$4.32	\$0.00	\$36.56
5	70	\$26.26	\$7.85	\$14.11	\$0.00	\$48.22
6	75	\$28.14	\$7.85	\$14.44	\$0.00	\$50.43
7	80	\$30.02	\$7.85	\$14.77	\$0.00	\$52.64
8	90	\$33.77	\$7.85	\$15.44	\$0.00	\$57.06

**Notes:**  
Steps are 750 hrs.

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

PAINTER (TRAFFIC MARKINGS)	12/01/2014	\$34.60	\$7.30	\$12.95	\$0.00	\$54.85
LABORERS - ZONE 1	06/01/2015	\$35.35	\$7.30	\$12.95	\$0.00	\$55.60
	12/01/2015	\$36.10	\$7.30	\$12.95	\$0.00	\$56.35
	06/01/2016	\$36.85	\$7.30	\$12.95	\$0.00	\$57.10
	12/01/2016	\$37.85	\$7.30	\$12.95	\$0.00	\$58.10

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2015	\$37.16	\$7.85	\$16.10	\$0.00	\$61.11
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2015	\$38.06	\$7.85	\$16.10	\$0.00	\$62.01
	01/01/2016	\$39.01	\$7.85	\$16.10	\$0.00	\$62.96
	07/01/2016	\$39.96	\$7.85	\$16.10	\$0.00	\$63.91
	01/01/2017	\$40.91	\$7.85	\$16.10	\$0.00	\$64.86

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW**

**Effective Date - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.58	\$7.85	\$0.00	\$0.00	\$26.43
2	55	\$20.44	\$7.85	\$3.66	\$0.00	\$31.95
3	60	\$22.30	\$7.85	\$3.99	\$0.00	\$34.14
4	65	\$24.15	\$7.85	\$4.32	\$0.00	\$36.32
5	70	\$26.01	\$7.85	\$14.11	\$0.00	\$47.97
6	75	\$27.87	\$7.85	\$14.44	\$0.00	\$50.16
7	80	\$29.73	\$7.85	\$14.77	\$0.00	\$52.35
8	90	\$33.44	\$7.85	\$15.44	\$0.00	\$56.73

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.03	\$7.85	\$0.00	\$0.00	\$26.88
2	55	\$20.93	\$7.85	\$3.66	\$0.00	\$32.44
3	60	\$22.84	\$7.85	\$3.99	\$0.00	\$34.68
4	65	\$24.74	\$7.85	\$4.32	\$0.00	\$36.91
5	70	\$26.64	\$7.85	\$14.11	\$0.00	\$48.60
6	75	\$28.55	\$7.85	\$14.44	\$0.00	\$50.84
7	80	\$30.45	\$7.85	\$14.77	\$0.00	\$53.07
8	90	\$34.25	\$7.85	\$15.44	\$0.00	\$57.54

**Notes:**

Steps are 750 hrs.

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

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2015	\$35.22	\$7.85	\$16.10	\$0.00	\$59.17
PAINTERS LOCAL 35 - ZONE 2	07/01/2015	\$36.12	\$7.85	\$16.10	\$0.00	\$60.07
	01/01/2016	\$37.07	\$7.85	\$16.10	\$0.00	\$61.02
	07/01/2016	\$38.02	\$7.85	\$16.10	\$0.00	\$61.97
	01/01/2017	\$38.97	\$7.85	\$16.10	\$0.00	\$62.92

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date - 01/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.61	\$7.85	\$0.00	\$0.00	\$25.46
2	55	\$19.37	\$7.85	\$3.66	\$0.00	\$30.88
3	60	\$21.13	\$7.85	\$3.99	\$0.00	\$32.97
4	65	\$22.89	\$7.85	\$4.32	\$0.00	\$35.06
5	70	\$24.65	\$7.85	\$14.11	\$0.00	\$46.61
6	75	\$26.42	\$7.85	\$14.44	\$0.00	\$48.71
7	80	\$28.18	\$7.85	\$14.77	\$0.00	\$50.80
8	90	\$31.70	\$7.85	\$15.44	\$0.00	\$54.99

**Effective Date - 07/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.06	\$7.85	\$0.00	\$0.00	\$25.91
2	55	\$19.87	\$7.85	\$3.66	\$0.00	\$31.38
3	60	\$21.67	\$7.85	\$3.99	\$0.00	\$33.51
4	65	\$23.48	\$7.85	\$4.32	\$0.00	\$35.65
5	70	\$25.28	\$7.85	\$14.11	\$0.00	\$47.24
6	75	\$27.09	\$7.85	\$14.44	\$0.00	\$49.38
7	80	\$28.90	\$7.85	\$14.77	\$0.00	\$51.52
8	90	\$32.51	\$7.85	\$15.44	\$0.00	\$55.80

**Notes:**

Steps are 750 hrs.

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

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2014	\$32.23	\$9.91	\$9.33	\$0.00	\$51.47
	06/01/2015	\$32.58	\$9.91	\$9.33	\$0.00	\$51.82
	08/01/2015	\$32.58	\$10.41	\$9.33	\$0.00	\$52.32
	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) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
	08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2014	\$41.60	\$9.80	\$18.17	\$0.00	\$69.57
	08/01/2015	\$43.10	\$9.80	\$18.17	\$0.00	\$71.07

**Apprentice - PILE DRIVER - Local 56 Zone 1**

**Effective Date - 08/01/2014**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.80	\$9.80	\$18.17	\$0.00	\$48.77
2	60	\$24.96	\$9.80	\$18.17	\$0.00	\$52.93
3	70	\$29.12	\$9.80	\$18.17	\$0.00	\$57.09
4	75	\$31.20	\$9.80	\$18.17	\$0.00	\$59.17
5	80	\$33.28	\$9.80	\$18.17	\$0.00	\$61.25
6	80	\$33.28	\$9.80	\$18.17	\$0.00	\$61.25
7	90	\$37.44	\$9.80	\$18.17	\$0.00	\$65.41
8	90	\$37.44	\$9.80	\$18.17	\$0.00	\$65.41

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.55	\$9.80	\$18.17	\$0.00	\$49.52
2	60	\$25.86	\$9.80	\$18.17	\$0.00	\$53.83
3	70	\$30.17	\$9.80	\$18.17	\$0.00	\$58.14
4	75	\$32.33	\$9.80	\$18.17	\$0.00	\$60.30
5	80	\$34.48	\$9.80	\$18.17	\$0.00	\$62.45
6	80	\$34.48	\$9.80	\$18.17	\$0.00	\$62.45
7	90	\$38.79	\$9.80	\$18.17	\$0.00	\$66.76
8	90	\$38.79	\$9.80	\$18.17	\$0.00	\$66.76

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

PIPEFITTER & STEAMFITTER	03/01/2015	\$49.69	\$9.20	\$16.64	\$0.00	\$75.53
PIPEFITTERS LOCAL 537	09/01/2015	\$50.69	\$9.20	\$16.64	\$0.00	\$76.53
	03/01/2016	\$51.69	\$9.20	\$16.64	\$0.00	\$77.53
	09/01/2016	\$52.69	\$9.20	\$16.64	\$0.00	\$78.53
	03/01/2017	\$53.69	\$9.20	\$16.64	\$0.00	\$79.53

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PIPEFITTER - Local 537**

**Effective Date - 03/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.88	\$9.20	\$7.50	\$0.00	\$36.58
2	45	\$22.36	\$9.20	\$16.64	\$0.00	\$48.20
3	60	\$29.81	\$9.20	\$16.64	\$0.00	\$55.65
4	70	\$34.78	\$9.20	\$16.64	\$0.00	\$60.62
5	80	\$39.75	\$9.20	\$16.64	\$0.00	\$65.59

**Effective Date - 09/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.28	\$9.20	\$7.50	\$0.00	\$36.98
2	45	\$22.81	\$9.20	\$16.64	\$0.00	\$48.65
3	60	\$30.41	\$9.20	\$16.64	\$0.00	\$56.25
4	70	\$35.48	\$9.20	\$16.64	\$0.00	\$61.32
5	80	\$40.55	\$9.20	\$16.64	\$0.00	\$66.39

**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:\*\***

PIPELAYER	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
LABORERS - ZONE 1	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

PLUMBERS & GASFITTERS	03/01/2015	\$50.66	\$10.32	\$14.54	\$0.00	\$75.52
PLUMBERS & GASFITTERS LOCAL 12	09/01/2015	\$51.66	\$10.32	\$14.54	\$0.00	\$76.52
	03/01/2016	\$52.81	\$10.32	\$14.54	\$0.00	\$77.67
	09/01/2016	\$53.86	\$10.32	\$14.54	\$0.00	\$78.72
	03/01/2017	\$54.86	\$10.32	\$14.54	\$0.00	\$79.72

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PLUMBER/GASFITTER - Local 12**

**Effective Date - 03/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.73	\$10.32	\$5.42	\$0.00	\$33.47
2	40	\$20.26	\$10.32	\$6.11	\$0.00	\$36.69
3	55	\$27.86	\$10.32	\$8.22	\$0.00	\$46.40
4	65	\$32.93	\$10.32	\$9.62	\$0.00	\$52.87
5	75	\$38.00	\$10.32	\$11.03	\$0.00	\$59.35

**Effective Date - 09/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.08	\$10.32	\$5.42	\$0.00	\$33.82
2	40	\$20.66	\$10.32	\$6.12	\$0.00	\$37.10
3	55	\$28.41	\$10.32	\$8.22	\$0.00	\$46.95
4	65	\$33.58	\$10.32	\$9.63	\$0.00	\$53.53
5	75	\$38.75	\$10.32	\$11.04	\$0.00	\$60.11

**Notes:**

\*\* 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr  
Step4 with lic\$56.12 Step5 with lic\$62.59

**Apprentice to Journeyworker Ratio:\*\***

PNEUMATIC CONTROLS (TEMP.) PIPEFITTERS LOCAL 537	03/01/2015	\$49.69	\$9.20	\$16.64	\$0.00	\$75.53
	09/01/2015	\$50.69	\$9.20	\$16.64	\$0.00	\$76.53
	03/01/2016	\$51.69	\$9.20	\$16.64	\$0.00	\$77.53
	09/01/2016	\$52.69	\$9.20	\$16.64	\$0.00	\$78.53
	03/01/2017	\$53.69	\$9.20	\$16.64	\$0.00	\$79.53

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

PNEUMATIC DRILL/TOOL OPERATOR LABORERS - ZONE 1	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER LABORERS - ZONE 1	12/01/2014	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	06/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	12/01/2015	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	06/01/2016	\$37.85	\$7.30	\$12.95	\$0.00	\$58.10
	12/01/2016	\$38.85	\$7.30	\$12.95	\$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>	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
	12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$29.40	\$10.00	\$14.30	\$0.00	\$53.70
	06/01/2015	\$29.92	\$10.00	\$14.30	\$0.00	\$54.22
	12/01/2015	\$30.79	\$10.00	\$14.30	\$0.00	\$55.09
	06/01/2016	\$31.31	\$10.00	\$14.30	\$0.00	\$55.61
	12/01/2016	\$32.18	\$10.00	\$14.30	\$0.00	\$56.48
	06/01/2017	\$32.87	\$10.00	\$14.30	\$0.00	\$57.17
	12/01/2017	\$33.56	\$10.00	\$14.30	\$0.00	\$57.86
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY MIX CONCRETE DRIVERS after 4/30/10 (Drivers Hired After 4/30/2010) <i>TEAMSTERS LOCAL 25b</i>	07/01/2014	\$27.73	\$7.73	\$8.65	\$0.00	\$44.11
	05/01/2015	\$27.88	\$7.73	\$8.92	\$0.00	\$44.53
	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 25b</i>	07/01/2014	\$29.03	\$7.73	\$8.65	\$0.00	\$45.41
	05/01/2015	\$29.18	\$7.73	\$8.92	\$0.00	\$45.83
	07/01/2015	\$29.18	\$7.98	\$8.92	\$0.00	\$46.08
	05/01/2016	\$29.33	\$7.98	\$9.31	\$0.00	\$46.62
	07/01/2016	\$29.33	\$8.23	\$9.31	\$0.00	\$46.87
	05/01/2017	\$29.48	\$8.23	\$9.72	\$0.00	\$47.43
	07/01/2017	\$29.48	\$8.48	\$9.72	\$0.00	\$47.68
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	04/01/2011	\$24.24	\$8.67	\$15.51	\$0.00	\$48.42
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 2 (Residential Wood)</i>	05/01/2011	\$24.24	\$6.34	\$6.23	\$0.00	\$36.81

As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.

**Apprentice - CARPENTER (Residential Wood Frame) - Zone 2**

**Effective Date - 05/01/2011**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.54	\$6.34	\$0.00	\$0.00	\$20.88
2	60	\$14.54	\$6.34	\$6.23	\$0.00	\$27.11
3	65	\$15.76	\$6.34	\$6.23	\$0.00	\$28.33
4	70	\$16.97	\$6.34	\$6.23	\$0.00	\$29.54
5	75	\$18.18	\$6.34	\$6.23	\$0.00	\$30.75
6	80	\$19.39	\$6.34	\$6.23	\$0.00	\$31.96
7	85	\$20.60	\$6.34	\$6.23	\$0.00	\$33.17
8	90	\$21.82	\$6.34	\$6.23	\$0.00	\$34.39

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc. Roofer Waterproofing & Roofer Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2015	\$40.11	\$10.50	\$11.60	\$0.00	\$62.21
	08/01/2015	\$41.01	\$10.50	\$11.60	\$0.00	\$63.11
	02/01/2016	\$41.91	\$10.50	\$11.60	\$0.00	\$64.01

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ROOFER - Local 33**

**Effective Date - 02/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.06	\$10.50	\$3.38	\$0.00	\$33.94
2	60	\$24.07	\$10.50	\$11.60	\$0.00	\$46.17
3	65	\$26.07	\$10.50	\$11.60	\$0.00	\$48.17
4	75	\$30.08	\$10.50	\$11.60	\$0.00	\$52.18
5	85	\$34.09	\$10.50	\$11.60	\$0.00	\$56.19

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.51	\$10.50	\$3.38	\$0.00	\$34.39
2	60	\$24.61	\$10.50	\$11.60	\$0.00	\$46.71
3	65	\$26.66	\$10.50	\$11.60	\$0.00	\$48.76
4	75	\$30.76	\$10.50	\$11.60	\$0.00	\$52.86
5	85	\$34.86	\$10.50	\$11.60	\$0.00	\$56.96

**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 ROOFERS LOCAL 33	02/01/2015	\$40.36	\$10.50	\$11.60	\$0.00	\$62.46
	08/01/2015	\$41.26	\$10.50	\$11.60	\$0.00	\$63.36
	02/01/2016	\$42.16	\$10.50	\$11.60	\$0.00	\$64.26
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER SHEETMETAL WORKERS LOCAL 17 - A	02/01/2015	\$43.69	\$9.82	\$20.54	\$2.19	\$76.24
	08/01/2015	\$44.69	\$9.82	\$20.54	\$2.19	\$77.24
	02/01/2016	\$45.69	\$9.82	\$20.54	\$2.19	\$78.24
	08/01/2016	\$46.84	\$9.82	\$20.54	\$2.19	\$79.39
	02/01/2017	\$47.94	\$9.82	\$20.54	\$2.19	\$80.49
	08/01/2017	\$49.04	\$9.82	\$20.54	\$2.19	\$81.59
	02/01/2018	\$50.19	\$9.82	\$20.54	\$2.19	\$82.74

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - SHEET METAL WORKER - Local 17-A**

**Effective Date - 02/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.48	\$9.82	\$4.58	\$0.00	\$31.88
2	40	\$17.48	\$9.82	\$4.58	\$0.00	\$31.88
3	45	\$19.66	\$9.82	\$9.09	\$1.16	\$39.73
4	45	\$19.66	\$9.82	\$9.09	\$1.16	\$39.73
5	50	\$21.85	\$9.82	\$9.91	\$1.25	\$42.83
6	50	\$21.85	\$9.82	\$10.16	\$1.25	\$43.08
7	60	\$26.21	\$9.82	\$11.55	\$1.43	\$49.01
8	65	\$28.40	\$9.82	\$12.38	\$1.52	\$52.12
9	75	\$32.77	\$9.82	\$14.02	\$1.70	\$58.31
10	85	\$37.14	\$9.82	\$15.16	\$1.86	\$63.98

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.88	\$9.82	\$4.58	\$0.00	\$32.28
2	40	\$17.88	\$9.82	\$4.58	\$0.00	\$32.28
3	45	\$20.11	\$9.82	\$9.09	\$1.17	\$40.19
4	45	\$20.11	\$9.82	\$9.09	\$1.17	\$40.19
5	50	\$22.35	\$9.82	\$9.91	\$1.26	\$43.34
6	50	\$22.35	\$9.82	\$10.16	\$1.27	\$43.60
7	60	\$26.81	\$9.82	\$11.55	\$1.45	\$49.63
8	65	\$29.05	\$9.82	\$12.38	\$1.54	\$52.79
9	75	\$33.52	\$9.82	\$14.02	\$1.72	\$59.08
10	85	\$37.99	\$9.82	\$15.16	\$1.89	\$64.86

**Notes:**  
Steps are 6 mos.

**Apprentice to Journeyworker Ratio:1:4**

SIGN ERECTOR PAINTERS LOCAL 35 - ZONE 2	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
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**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - SIGN ERECTOR - Local 35 Zone 2**

**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**

<b>SPECIALIZED EARTH MOVING EQUIP &lt; 35 TONS</b>		12/01/2014	\$32.69	\$9.91	\$9.33	\$0.00	\$51.93
<i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>		06/01/2015	\$33.04	\$9.91	\$9.33	\$0.00	\$52.28
		08/01/2015	\$33.04	\$10.41	\$9.33	\$0.00	\$52.78
		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
<b>SPECIALIZED EARTH MOVING EQUIP &gt; 35 TONS</b>		12/01/2014	\$32.98	\$9.91	\$9.33	\$0.00	\$52.22
<i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>		06/01/2015	\$33.33	\$9.91	\$9.33	\$0.00	\$52.57
		08/01/2015	\$33.33	\$10.41	\$9.33	\$0.00	\$53.07
		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
<b>SPRINKLER FITTER</b>		03/01/2015	\$54.58	\$8.42	\$14.75	\$0.00	\$77.75
<i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>		10/01/2015	\$55.73	\$8.42	\$14.75	\$0.00	\$78.90
		01/01/2016	\$55.73	\$8.67	\$14.90	\$0.00	\$79.30
		03/01/2016	\$56.73	\$8.67	\$14.90	\$0.00	\$80.30
		10/01/2016	\$57.88	\$8.67	\$14.90	\$0.00	\$81.45
		03/01/2017	\$58.88	\$8.67	\$14.90	\$0.00	\$82.45

**Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1**

**Effective Date - 03/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.10	\$8.42	\$8.40	\$0.00	\$35.92
2	40	\$21.83	\$8.42	\$8.40	\$0.00	\$38.65
3	45	\$24.56	\$8.42	\$8.40	\$0.00	\$41.38
4	50	\$27.29	\$8.42	\$8.40	\$0.00	\$44.11
5	55	\$30.02	\$8.42	\$8.40	\$0.00	\$46.84
6	60	\$32.75	\$8.42	\$8.40	\$0.00	\$49.57
7	65	\$35.48	\$8.42	\$8.40	\$0.00	\$52.30
8	70	\$38.21	\$8.42	\$8.40	\$0.00	\$55.03
9	75	\$40.94	\$8.42	\$8.40	\$0.00	\$57.76
10	80	\$43.66	\$8.42	\$8.40	\$0.00	\$60.48

**Effective Date - 10/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.51	\$8.42	\$8.40	\$0.00	\$36.33
2	40	\$22.29	\$8.42	\$8.40	\$0.00	\$39.11
3	45	\$25.08	\$8.42	\$8.40	\$0.00	\$41.90
4	50	\$27.87	\$8.42	\$8.40	\$0.00	\$44.69
5	55	\$30.65	\$8.42	\$8.40	\$0.00	\$47.47
6	60	\$33.44	\$8.42	\$8.40	\$0.00	\$50.26
7	65	\$36.22	\$8.42	\$8.40	\$0.00	\$53.04
8	70	\$39.01	\$8.42	\$8.40	\$0.00	\$55.83
9	75	\$41.80	\$8.42	\$8.40	\$0.00	\$58.62
10	80	\$44.58	\$8.42	\$8.40	\$0.00	\$61.40

**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	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
OPERATING ENGINEERS LOCAL 4	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2015	\$33.88	\$13.00	\$13.70	\$0.00	\$60.58
	09/01/2015	\$34.60	\$13.00	\$13.72	\$0.00	\$61.32
	03/01/2016	\$35.31	\$13.00	\$13.74	\$0.00	\$62.05

**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103**

**Effective Date - 03/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.55	\$13.00	\$0.41	\$0.00	\$26.96
2	40	\$13.55	\$13.00	\$0.41	\$0.00	\$26.96
3	45	\$15.25	\$13.00	\$10.87	\$0.00	\$39.12
4	45	\$15.25	\$13.00	\$10.87	\$0.00	\$39.12
5	50	\$16.94	\$13.00	\$11.11	\$0.00	\$41.05
6	55	\$18.63	\$13.00	\$11.38	\$0.00	\$43.01
7	60	\$20.33	\$13.00	\$11.64	\$0.00	\$44.97
8	65	\$22.02	\$13.00	\$11.89	\$0.00	\$46.91
9	70	\$23.72	\$13.00	\$12.15	\$0.00	\$48.87
10	75	\$25.41	\$13.00	\$12.41	\$0.00	\$50.82

**Effective Date - 09/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.84	\$13.00	\$0.42	\$0.00	\$27.26
2	40	\$13.84	\$13.00	\$0.42	\$0.00	\$27.26
3	45	\$15.57	\$13.00	\$10.88	\$0.00	\$39.45
4	45	\$15.57	\$13.00	\$10.88	\$0.00	\$39.45
5	50	\$17.30	\$13.00	\$11.14	\$0.00	\$41.44
6	55	\$19.03	\$13.00	\$11.39	\$0.00	\$43.42
7	60	\$20.76	\$13.00	\$11.65	\$0.00	\$45.41
8	65	\$22.49	\$13.00	\$11.90	\$0.00	\$47.39
9	70	\$24.22	\$13.00	\$12.17	\$0.00	\$49.39
10	75	\$25.95	\$13.00	\$12.43	\$0.00	\$51.38

**Notes:**

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2015	\$47.90	\$10.18	\$18.50	\$0.00	\$76.58
	08/01/2015	\$48.80	\$10.18	\$18.57	\$0.00	\$77.55
	02/01/2016	\$49.37	\$10.18	\$18.57	\$0.00	\$78.12
	08/01/2016	\$50.27	\$10.18	\$18.65	\$0.00	\$79.10
	02/01/2017	\$50.84	\$10.18	\$18.65	\$0.00	\$79.67

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 02/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.95	\$10.18	\$18.50	\$0.00	\$52.63
2	60	\$28.74	\$10.18	\$18.50	\$0.00	\$57.42
3	70	\$33.53	\$10.18	\$18.50	\$0.00	\$62.21
4	80	\$38.32	\$10.18	\$18.50	\$0.00	\$67.00
5	90	\$43.11	\$10.18	\$18.50	\$0.00	\$71.79

**Effective Date - 08/01/2015**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.40	\$10.18	\$18.57	\$0.00	\$53.15
2	60	\$29.28	\$10.18	\$18.57	\$0.00	\$58.03
3	70	\$34.16	\$10.18	\$18.57	\$0.00	\$62.91
4	80	\$39.04	\$10.18	\$18.57	\$0.00	\$67.79
5	90	\$43.92	\$10.18	\$18.57	\$0.00	\$72.67

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$35.95	\$7.30	\$13.15	\$0.00	\$56.40
	06/01/2015	\$36.70	\$7.30	\$13.15	\$0.00	\$57.15
	12/01/2015	\$37.45	\$7.30	\$13.15	\$0.00	\$57.90
	06/01/2016	\$38.20	\$7.30	\$13.15	\$0.00	\$58.65
	12/01/2016	\$39.20	\$7.30	\$13.15	\$0.00	\$59.65

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$34.67	\$7.30	\$13.15	\$0.00	\$55.12
	06/01/2015	\$35.42	\$7.30	\$13.15	\$0.00	\$55.87
	12/01/2015	\$36.17	\$7.30	\$13.15	\$0.00	\$56.62
	06/01/2016	\$36.92	\$7.30	\$13.15	\$0.00	\$57.37
	12/01/2016	\$37.92	\$7.30	\$13.15	\$0.00	\$58.37

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2014	\$34.55	\$7.30	\$13.15	\$0.00	\$55.00
	06/01/2015	\$35.30	\$7.30	\$13.15	\$0.00	\$55.75
	12/01/2015	\$36.05	\$7.30	\$13.15	\$0.00	\$56.50
	06/01/2016	\$36.80	\$7.30	\$13.15	\$0.00	\$57.25
	12/01/2016	\$37.80	\$7.30	\$13.15	\$0.00	\$58.25

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$41.99	\$10.00	\$14.30	\$0.00	\$66.29
	06/01/2015	\$42.73	\$10.00	\$14.30	\$0.00	\$67.03
	12/01/2015	\$43.97	\$10.00	\$14.30	\$0.00	\$68.27
	06/01/2016	\$44.72	\$10.00	\$14.30	\$0.00	\$69.02
	12/01/2016	\$45.95	\$10.00	\$14.30	\$0.00	\$70.25
	06/01/2017	\$46.94	\$10.00	\$14.30	\$0.00	\$71.24
	12/01/2017	\$47.93	\$10.00	\$14.30	\$0.00	\$72.23
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2014	\$33.27	\$9.91	\$9.33	\$0.00	\$52.51
	06/01/2015	\$33.62	\$9.91	\$9.33	\$0.00	\$52.86
	08/01/2015	\$33.62	\$10.41	\$9.33	\$0.00	\$53.36
	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
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2014	\$46.83	\$7.30	\$13.55	\$0.00	\$67.68
	06/01/2015	\$47.58	\$7.30	\$13.55	\$0.00	\$68.43
	12/01/2015	\$48.33	\$7.30	\$13.55	\$0.00	\$69.18
	06/01/2016	\$49.08	\$7.30	\$13.55	\$0.00	\$69.93
	12/01/2016	\$50.08	\$7.30	\$13.55	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2014	\$48.83	\$7.30	\$13.55	\$0.00	\$69.68
	06/01/2015	\$49.58	\$7.30	\$13.55	\$0.00	\$70.43
	12/01/2015	\$50.33	\$7.30	\$13.55	\$0.00	\$71.18
	06/01/2016	\$51.08	\$7.30	\$13.55	\$0.00	\$71.93
	12/01/2016	\$52.08	\$7.30	\$13.55	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2014	\$38.90	\$7.30	\$13.55	\$0.00	\$59.75
	06/01/2015	\$39.65	\$7.30	\$13.55	\$0.00	\$60.50
	12/01/2015	\$40.40	\$7.30	\$13.55	\$0.00	\$61.25
	06/01/2016	\$41.15	\$7.30	\$13.55	\$0.00	\$62.00
	12/01/2016	\$42.15	\$7.30	\$13.55	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2014	\$40.90	\$7.30	\$13.55	\$0.00	\$61.75
	06/01/2015	\$41.65	\$7.30	\$13.55	\$0.00	\$62.50
	12/01/2015	\$42.40	\$7.30	\$13.55	\$0.00	\$63.25
	06/01/2016	\$43.15	\$7.30	\$13.55	\$0.00	\$64.00
	12/01/2016	\$44.15	\$7.30	\$13.55	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2014	\$32.69	\$9.91	\$9.33	\$0.00	\$51.93
	06/01/2015	\$33.04	\$9.91	\$9.33	\$0.00	\$52.28
	08/01/2015	\$33.04	\$10.41	\$9.33	\$0.00	\$52.78
	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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2014	\$34.85	\$7.30	\$12.95	\$0.00	\$55.10
	06/01/2015	\$35.60	\$7.30	\$12.95	\$0.00	\$55.85
	12/01/2015	\$36.35	\$7.30	\$12.95	\$0.00	\$56.60
	06/01/2016	\$37.10	\$7.30	\$12.95	\$0.00	\$57.35
	12/01/2016	\$38.10	\$7.30	\$12.95	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2014	\$42.39	\$10.00	\$14.30	\$0.00	\$66.69
	06/01/2015	\$43.14	\$10.00	\$14.30	\$0.00	\$67.44
	12/01/2015	\$44.39	\$10.00	\$14.30	\$0.00	\$68.69
	06/01/2016	\$45.14	\$10.00	\$14.30	\$0.00	\$69.44
	12/01/2016	\$46.39	\$10.00	\$14.30	\$0.00	\$70.69
	06/01/2017	\$47.39	\$10.00	\$14.30	\$0.00	\$71.69
12/01/2017	\$48.39	\$10.00	\$14.30	\$0.00	\$72.69	
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS &amp; GASFITTERS LOCAL 12</i>	03/01/2015	\$50.66	\$10.32	\$14.54	\$0.00	\$75.52
	09/01/2015	\$51.66	\$10.32	\$14.54	\$0.00	\$76.52
	03/01/2016	\$52.81	\$10.32	\$14.54	\$0.00	\$77.67
	09/01/2016	\$53.86	\$10.32	\$14.54	\$0.00	\$78.72
	03/01/2017	\$54.86	\$10.32	\$14.54	\$0.00	\$79.72
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
<b>Outside Electrical - East</b>						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$25.66	\$8.70	\$4.48	\$0.00	\$38.84
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$36.55	\$8.70	\$6.58	\$0.00	\$51.83
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$29.94	\$8.70	\$6.05	\$0.00	\$44.69
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$23.52	\$8.70	\$5.24	\$0.00	\$37.46
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$36.35	\$8.70	\$9.43	\$0.00	\$54.48
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$32.08	\$8.70	\$6.59	\$0.00	\$47.37
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$23.52	\$8.70	\$3.72	\$0.00	\$35.94
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$19.25	\$8.70	\$2.85	\$0.00	\$30.80
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/01/2013	\$42.77	\$8.70	\$11.78	\$0.00	\$63.25

**Apprentice - LINEMAN (Outside Electrical) - East Local 104**

**Effective Date - 09/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.66	\$8.70	\$4.24	\$0.00	\$38.60
2	65	\$27.80	\$8.70	\$4.71	\$0.00	\$41.21
3	70	\$29.94	\$8.70	\$5.43	\$0.00	\$44.07
4	75	\$32.08	\$8.70	\$6.16	\$0.00	\$46.94
5	80	\$34.22	\$8.70	\$6.88	\$0.00	\$49.80
6	85	\$36.35	\$8.70	\$7.62	\$0.00	\$52.67
7	90	\$38.49	\$8.70	\$8.83	\$0.00	\$56.02

**Notes:**

**Apprentice to Journeyworker Ratio:1:2**

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$26.33	\$4.18	\$2.79	\$0.00	\$33.30
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/29/2012	\$17.18	\$3.37	\$0.00	\$0.00	\$20.55
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. This classification does not apply to wholesale tree removal.						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/29/2012	\$15.15	\$3.37	\$0.00	\$0.00	\$18.52
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.						

**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.

**SECTION 011100  
SUMMARY OF WORK**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. This Section includes the following:

1. Work under this Contract
2. Contract Method
3. Contract Conditions
4. Work under other contracts
5. Work Sequence
6. Owner-furnished products
7. Permits, inspection and testing required by Governing Authorities
8. Specification formats and conventions.
9. Reference standards.
10. Miscellaneous Provisions

- B. Related Sections include the following:

1. Section 013100 – PROJECT MANAGEMENT AND COORDINATION, for field engineering and coordination requirements.
2. Section 013119 – PROJECT MEETINGS, for pre-construction conference and regular site meetings.
3. Section 013200– CONSTRUCTION PROGRESS DOCUMENTATION, for requirements for preparing and submitting progress schedule, including preliminary submittal of sequencing plan.
4. Section 011400 – WORK RESTRICTIONS, for contractor's use of premises and other contract requirements during construction.
5. Section 015000 – TEMPORARY FACILITIES AND CONTROLS, for additional information on temporary measures required during construction.
6. Section 017400 – CONSTRUCTION WASTE MANAGEMENT, for removal of non-hazardous debris.
7. Section 017329 – CUTTING AND PATCHING, for requirements for cutting and patching.

1.3 WORK UNDER THIS CONTRACT

- A. Project Identification:  
Lighting and Security Cameras at Hancock Cemetery Walk

- B. Project Location:
  - 1305 Hancock Street
  - Quincy, MA 02169
  
- C. Owner:
  - City of Quincy
  - 1305 Hancock Street
  - Quincy, MA 02169
  - Contact Person: Kathryn R. Hobin, Purchasing Agent
  
- D. Landscape Architect:
  - Halvorson Design Partnership, Inc.
  - 25 Kingston Street, 5<sup>th</sup> Floor
  - Boston, MA 02111
  - Contact Person: Richard Houghton
  
- E. Description of the Work
  - 1. Site Preparation and Demolition
  - 2. Site Work including but not limited to furnishing and installation of: pedestrian pole mounted lighting, security cameras mounted to poles, conduit, wiring and connections; black vinyl coated chain link fencing and gates, bituminous concrete paving, seeded lawn areas and related earthwork.
  - 3. Building Work including but not limited to furnishing and installing of: wiring, cabling, conduit, connections for pedestrian pole mounted lighting and security cameras mounted to poles and coordination with the City of Quincy to connect systems to city systems to make fully functional and integrated with City IT network.
  - 4. Coordination with Electrical Utility to disconnect and remove wood pole, light, wiring and terminate electrical service after new lighting system is operational.

#### 1.4 CONTRACT METHOD

- A. Project will be constructed under a single prime contract. This Contract shall be a General Contract for Construction, bid as required by Public Bid Laws.

#### 1.5 CONTRACT CONDITIONS

- A. This Contract is subject to applicable State and local laws and all amendments thereto. Where any requirements contained herein do not conform to statutes governing the Work of this Contract, the statutes shall govern.
  
- B. This Project will be constructed for a political subdivision of the Commonwealth of Massachusetts, and is therefore exempt from State Sales and Use Tax. All bids shall be prepared and purchase of materials for the Project made on the basis of such exemption. After execution of the Contract, the Owner will furnish the Contractor with the exemption number to be used.
  
- C. The provisions of the Federal Occupational Safety and Health Act (OSHA) apply to the execution of the Work of this Contract, in addition to all other laws, ordinances, rules, regulations, and orders of any Federal, State, or local public authority bearing on the performance of the Work.

- D. Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if, through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon application of either part the Contract shall forthwith by physically amended to make such insertion or correction.

#### 1.6 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

#### 1.7 WORK SEQUENCE

- A. General: The Contractor's attention is directed toward the critical activities and limitations listed in this Article to highlight unusual conditions present in this Project.
  - 1. The Contractor shall be responsible for scheduling the Work accordingly, and in conformance with requirements of all other specifications for the Project.
  - 2. Sequencing requirements shall be clearly identified on all construction schedules required under Section 013200 – CONSTRUCTION PROGRESS DOCUMENTATION.

#### 1.8 PERMITS, INSPECTION AND TESTING REQUIRED BY GOVERNING AUTHORITIES

- A. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested, or approved, the General Contractor shall give the Designer and such Authority timely notice of its readiness so the Designer may observe such inspection and testing.
- B. Payment requirements for this permit fee are waived by the Owner. Waiver of permit fee in this instance shall not be understood to apply to other permit and fee requirements for the Project.

#### 1.9 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the bid date, except when a specific date is specified.
- C. Obtain copies of standards when required by Contract Documents. Maintain copy at job sit during progress of the specific work.

#### 1.10 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat 2004 Edition" numbering system.
  - 1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in

- numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  2. All instructions in the Specifications are addressed to the Contractor unless the responsibility of the Designer or Owner is clearly indicated.
    - a. Where products are listed or described in outline form, the phrase "The Contractor shall furnish these products" is implied.
    - b. Where installation instructions or performance criteria are listed or described in outline form, the phrase "The Contractor shall perform the Work in accordance with these requirements" is implied.
    - c. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
- C. Definitions:
1. Indicated: The word "indicated" refers to graphic representations, notes or schedules on Drawings, Paragraphs or schedules in Specifications, and similar requirements in Contract Documents. Terms such as "shown", "noted", "scheduled", and "specified" are used to help locate a reference. No limitation on location is intended except as specifically noted.
  2. Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted", are hereby defined as "directed by Designer", "requested by Designer", "authorized by Designer", etc. No implied meaning shall be interpreted to extend the Designer's responsibility into the Contractor's area of construction supervision.
  3. Approve: The term "approved" when used in conjunction with the Designer's action on the Contractor's submittals, applications, and similar requests, is limited to the duties and responsibilities of the Designer as stated in GENERAL CONDITIONS. Such approval shall not release the Contractor from responsibility to fulfill Contract requirements unless otherwise provided in the Contract Documents.
  4. Furnish: Supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
  5. Install: Operations at Project Site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
  6. Provide: To furnish and install, complete and ready for intended use.
  7. Installer: The Contractor or entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

8. Owner: The Awarding Authority.
  9. Authority having Jurisdiction: Any State, Local, or legal authority, as defined by statute.
- D. "Or Equal", "Or Equivalent": clause:
1. Where products or materials are prescribed by manufacture name, trade name or catalogue reference, the word "or approved equal" shall be understood to follow.
  2. An item shall be considered equal or equivalent to the named item, if all of the following conditions are met:
    - a. It is at least equal in appearance, quality, durability, strength and design.
    - b. It meets or exceeds all performance requirements specified.
    - c. It performs the function of the item to an equal or superior standard as does the named item.
  3. All deviations from products specified shall be submitted as substitutions. For related procedures, refer to Section 013300 – Submittal Procedures.

#### 1.11 MISCELLANEOUS PROVISIONS

- A. Discovery: If during the excavation or other work, articles of unusual value, or of historical or archaeological significance are encountered the ownership of such articles is retained by the Owner, and information regarding their discovery shall be immediately furnished to the Designer.
1. If the nature of the article is such that the work cannot proceed without danger of damaging same, work in that area shall be immediately discontinued until the Designer has decided the proper procedure to be followed.
  2. Any time lost thereby shall be a condition for which the time of the Contract may be extended.
  3. All costs incurred after discovery in the salvaging of such articles shall be borne by the Owner.

### **PART 2 - PRODUCTS (Not Used)**

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### **PART 3 - EXECUTION (Not Used)**

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**END OF SECTION**

**SECTION 011400  
WORK RESTRICTIONS**

**PART 1 - GENERAL**

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1.1 GENERAL REQUIREMENTS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:
1. Contractor responsibility for Owner's Representative's additional services.
  2. Construction Documents, Project Electronic Files and graphic reproduction of Contract Documents.
  3. Interpretation and modification of Contract Documents.
  4. Contractor's reports.
  5. Storm water pollution protection plan
  6. Cleaning materials
  7. Safety and disposal requirements.
  8. Conduct of the Work.
  9. Hours of work.
  10. Contractor use of premises.
  11. Existing Utilities.
  12. Noise control.
  13. Safety and disposal requirements and accident prevention.
  14. Welding and cutting.
  15. Municipal police services
  16. Storage of materials off-site
  17. Dust control.
  18. Cleaning during construction.
  19. Debris control and removal of rubbish.
  20. Pollution control.
  21. Owner's occupancy requirements
- B. Related work includes, but is not limited to, the following work under other Sections:
1. Section 013200 – CONSTRUCTION PROGRESS DOCUMENTATION: Preparation and execution of construction schedule.
  2. Section 013100 – PROJECT MANAGEMENT COORDINATION: Procedures and responsibilities for coordinating the Work.
  3. Section 013300 – SUBMITTAL PROCEDURES. Submittal procedures.
  4. Section 015000 – TEMPORARY FACILITIES AND CONTROLS, for additional information on temporary measures required during construction.
  5. Section 017400 – CONSTRUCTION WASTE MANAGEMENT, for removal of non-hazardous debris including provisions for recycling and disposal.
  6. Section 017700 – CLOSEOUT PROCEDURES: Procedures for completing the Work.

7. Section 017839– PROJECT RECORD DOCUMENTS: Preparation of record drawings and other documents.

### 1.3 SUBMITTALS

- A. General: Refer to Section 013300 – SUBMITTAL PROCEDURES, for submittal provisions and procedures.
- B. Temporary Construction Facilities Plan: submit to the Owner's Representative, at the Pre-construction meeting a site plan, which shall include:
  - a. Delivery Hours and Delivery Routes
  - b. Hours of Work
  - c. Temp fencing, erosion control, and metering locations
  - d. Location for stockpiling and storage of materials
  - e. Locations for waste management containers.
  - f. Protection of existing curbs and walkways.
  - g. Location of Temporary Sanitary Facilities
2. Refer to Section 015000 – TEMPORARY FACILITIES AND CONTROLS, for specifications for temporary construction and other items to be shown on Logistics Plan.
3. No work shall commence until the Logistics Plan has been approved.
- C. Reports:
  1. Documentation of off-site storage facilities.
  2. With each Application for Payment, submit the following reports, compiled on a monthly basis:
    - a. Contractor's Reports
    - b. Proof of submission of Certified weekly payrolls to Owner.

### 1.4 CONTRACTOR RESPONSIBILITY TO THE OWNER FOR OWNER'S REPRESENTATIVE'S ADDITIONAL SERVICES

- A. The Contract between the Owner and the Owner's Representative contains provisions for additional services that may be required of the Owner's Representative during construction due to unforeseen conditions.
  1. Where such additional services become necessary due to the activities of the Contractor, as determined by the Owner's Project Manager, costs for such services will be the responsibility of the Contractor, and will be deducted from the Contract Amount.
- B. Additional services for which the Contractor is responsible for cost to the Owner may include the following activities of the Owner's Representative:
  1. Review of Requests for Information and Change Order Requests for work determined to be covered in the Contract Documents. Refer to related Articles in this Section.
  2. Continuation of construction administration beyond the dates specified for Final Completion of the Work: Refer to Section 013200 – CONSTRUCTION PROGRESS DOCUMENTATION.
  3. Review of re-submitted submittals and Substitution Requests that have been rejected: Refer to Section 013300 – SUBMITTAL PROCEDURES.
  4. Re-inspection of incomplete work: Refer to Section 017700 – CLOSEOUT

PROCEDURES.

5. Design services for the resolution of non-conforming work.

1.5 CONSTRUCTION DOCUMENTS

- A. The General Contractor and each Subcontractor shall retain copies of the Contract Documents issued to them for bidding purposes.
  1. The Owner will furnish to the General Contractor, without additional charge, an additional ten (10) complete sets of the Contract Documents, including Drawings and Specifications, for use during the construction period.
  2. The Owner will furnish to each Sub-Contractor, without additional charge, two (2) additional copies of those Drawings and Specifications directly related to the work of their respective trades for use during the construction period.
  3. Extra sets returned by bidders and not required for other purposes, as determined by the Owner's Project Manager, will be made available to Contractor and Subcontractors for the Work.
- B. All other hard copies of the Contract Documents required by the Contractor or Subcontractors for use during the construction period shall be purchased by the party requiring same. Owner's Project Manger will furnish approximate costs of such additional copies and will transmit originals to local printing companies with whom he regularly does business, but will not receive bills for such printing through his account. All negotiations for such printing shall be between Contractor and Printer.
  1. Refer to provisions in this Section, for electronic copies of documents to be made available for the Contractor's use during construction.
  2. Refer to Section 017839 – PROJECT RECORD DOCUMENTS, for additional sets to be provided by the Owner to the Contractor for the purpose of maintaining record prints of the Work as construction proceeds.

1.6 PROJECT ELECTRONIC FILES

- A. Definitions:
  1. Contract Documents: Printed hard copies of drawings and other documents, as defined in the General Conditions and listed in the signed copy of the Form of Agreement between Owner and Contractor.
    - a. In case of conflict between the Contract Documents and documents obtained through electronic means, the Contract Documents shall govern.
  2. Project Electronic Files: Electronic copies of electronic documents for the Project, comprising drawings listed on Document 011401 – Electronic Release Form.
- B. General Procedures: At the Pre-Construction Meeting, the Owner's Representative will present to the Contractor one compact disc (CD) with Project Electronic Files, for use in the preparation of coordination and record documents for the Project.
  1. Release Forms Required:
    - a. Contractor shall sign a copy of Document 011401 – Electronic Release Form, to be filled out and issued by the Owner's Representative.
    - b. By signing the release form, the Contractor is acting on behalf of all their subcontractors for the Work of this Project.

2. Additional copies of the compact disc with Project Electronic Files will be available from the Owner's Representative at an additional cost.
- C. Electronic File Format:
1. Editable Files: Electronic files for drawings listed on Document 011401 – Electronic Release Form will be furnished in “\*.DWG” format.
  2. Printable, Non-Editable Files: Electronic files for all Drawings in the Bid Set and for Drawings issued as Addenda will be furnished in “\*.PDF” format (Adobe Acrobat Reader, version 6.0).
  3. The Owner's Representative does not warrant that these electronic documents are compatible with any software or hardware other than those on which they were produced.
- D. Permitted Use of Project Electronic Files: Use of electronic files by the Contractor and Sub-Contractors is limited to the following activities:
1. Project Electronic Files may be used as a guide only for the preparation of Coordination Drawings and Record Drawings to be submitted as a requirement for the Project.
  2. Project Electronic Files may be used as a guide only for preparation of shop drawings. Exact copies of Contract Documents will not be accepted if submitted for these purposes, unless specifically permitted by an individual specification Section.
- E. Responsibilities of Contractor: Use and reproduction of Project Electronic Documents are subject to the following conditions:
1. The use of Project Electronic Files, reproduced either electronically or by other graphic reproduction methods, does not in any way alter the responsibilities of the Contractor for final system coordination. The Contractor shall incur all liability in this respect.
  2. The Contractor and all Subcontractors are responsible for checking the dimensions and completeness of the Project Electronic Files, and for determining any possible errors and omissions, as required by the General Conditions.
  3. The Contractor is responsible for updating Project Electronic Files as necessary to incorporate changes to the Work shown in Addenda and documents issued during construction.
  4. In no event shall the Owner's Representative or any other Person or Firm involved in the creation, production or distribution of the reproducible or electronic documents, be liable to the persons utilizing the documents, on account of any claim for damages. Each Person or Firm utilizing these documents agrees to release, indemnify, hold harmless and defend the Owner's Representative, its officers, employees and consultants from an against all liability arising out of such firm's use of the electronic or reproduced documents or information referred to herein.

- F. Ownership of Documents: By transferring copies of Project Electronic Files, the Owner's Representative does not in any way convey the copyright in the designs contained therein, nor do they convey a license to copy or use them for any purpose except as required for the construction of the Project.
  - G. License for Software: By transferring copies of Project Electronic Files, the Owner's Representative does not in any way convey transfer license to use the software on which the documents were prepared. Each entity using Project Electronic Files is responsible for obtaining licenses as needed for its use of those files.
- 1.7 GRAPHIC REPRODUCTION OF CONTRACT DOCUMENTS
- A. Reproduction of Contract Documents issued for the Project, by graphic reproduction methods, shall be subject to the conditions outlined for reproduction of Project Electronic Files.
- 1.8 INTERPRETATION AND MODIFICATION OF CONSTRUCTION DOCUMENTS
- A. Refer to General and Supplementary Conditions for general information on Change Orders, Work Change Directives, Field Orders and Owner's Representative's written amendments and clarifications. The intent of this Article is to provide for additional procedures to be followed during construction.
  - B. Requests for Information: Each time the Contractor or Subcontractor has a reasonable question on the interpretation of the Contract Documents, they shall submit in writing a Request for Information (RFI) to the Owner's Representative for response.
    - 1. The Contractor shall examine field conditions carefully and review the Drawings and Specifications thoroughly prior to issuing an RFI.
    - 2. The Contractor shall keep a log of RFI's, numbering them in the order in which they are issued.
    - 3. Each RFI shall contain a clear statement of the question, references to relevant Contract Documents and additional background information as needed to facilitate the Owner's Representative's review.
    - 4. All requests for information from Subcontractors shall be made through the Contractor and addressed to the Owner's Representative, and the Owner's Representative will distribute them as needed to the appropriate Consultants. A copy of each RFI shall be given to the Clerk of the Works.
    - 5. RFI's shall be issued in a timely manner to permit a thorough review and preparation of a response by the Owner's Representative and their Consultants.
    - 6. The Owner's Representative will prepare a written response to each RFI within 10 workdays, or sooner if the Contractor provides a realistic date when the response will be needed.
  - C. Proposal Requests: During construction, it may become necessary or desirable to modify the Contract Drawings or Specifications in response to concealed existing conditions, changes in the Owner's program or other unforeseen circumstances.
    - 1. Where such a modification may involve a change in the Contract price or time, the Owner's Representative will prepare a Proposal Request describing the modification under consideration, including sketches or drawings, specifications and other information to permit pricing by the Contractor.

2. Copies of each Proposal Request and its attachments will be distributed to the Owner, Clerk of the Works and Contractor.
  3. The Contractor shall respond in a timely manner with a Proposed Change Order detailing the estimated costs and change in Contract duration, for review by the Owner's Representative and approval by the Owner.
  4. A Proposal Request will not constitute direction to proceed with the modification unless accompanied by a Work Change Directive and an estimated price.
- D. Change Order Requests: If the Contractor is required to perform Work that they consider to represent a change in the cost of the Project, they may submit Change Order Requests for such work.
1. Each Change Order Request shall be accompanied by a document describing the modification under consideration, including sketches or drawings, specifications and other information to permit review of pricing by the Owner's Representative and Owner.
  2. Distribute copies of each Change Order Request and its attachments to the Owner, Clerk of the Works and Owner's Representative.
  3. The Owner's Representative and Owner will respond in a timely manner with a Proposed Change Order incorporating the Change Order Request if it is approved.
  4. Verbal approval of a Change Order Request will not constitute direction to proceed with the modification unless accompanied by a Change Order, or a Construction Change Directive with an estimated price.
- E. Owner's Representative Review of Contractor-Generated Requests for Information and Change Order Requests: The Owner's Representative will review and prepare written responses to the Contractor's Requests for Information and Change Order Requests that are submitted in accordance with the requirements of this section.
1. If the Contractor submits an excessive number of requests for information that are incomplete, or for which the information requested is available from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared or other prior Project correspondence or documentation, then the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to review those requests for information.
  2. If the Owner's Representative determines that the Work covered by a Change Order Request is covered by the scope of the Contract Documents, the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to evaluate proposals and prepare Instruments of Service associated with such Change Order Request.
  3. Refer to other paragraphs in this Section for procedures required in cases where Contractor is responsible to the Owner for costs for Additional Services of the Owner's Representative.
- 1.9 CONTRACTOR'S REPORTS
- A. A weekly report summarizing the work performed, weather conditions, number of workers, amount and kinds of equipment, unusual occurrences, and the like shall be submitted by the Contractor's Field Superintendent to the Owner's Representative, the Owner, the Clerk of the Works, each working day covering the work performed on the previous working day.
  - B. Form of the weekly report shall be as approved by the Owner's Representative.

- C. Attention is directed to recent amendments to MGL Chapter 149, Section 27B requiring submission of certified weekly payrolls directly to the Awarding Authority by every contractor and subcontractor doing public work.

## **PART 2 - PRODUCTS**

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### 2.1 CLEANING MATERIALS

- A. Use only those materials which will not create hazards to health or property and which will not damage surfaces
- B. Use only those cleaning materials and methods recommended by manufacturer or surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

## **PART 3 - EXECUTION**

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### 3.1 CONDUCT OF WORK

- A. The Contract Site shall be as shown on the Drawings, and shall include the entire area bound by the "Contract Limit" or "Limit of Work" lines as well as all areas outside of the Limit of Work Lines when required for performance of work under this Contract.
- B. Contractor shall take all steps necessary to protect existing conditions to remain. Damage to existing work caused by Contractor's operations under this Contract shall be repaired at Contractor's expense.
- C. Any street, paving, curb and/or sidewalk damaged as the result of work under this Contract, whether within or outside the limits of the Work, shall be repaired and/or replaced with new matching construction by the Contractor at his expense and in a manner satisfactory to the Owner's Representative and authorities having jurisdiction.
- D. Protection of Curbs and Walkways: Where existing curbs or walks are to remain, or after new curbs or walks are constructed and trucking is required over them, they shall be suitably protected as shown on approved Logistics Plan.
- E. Trenching and other work outside construction limits shall be expedited to the fullest and carried out with minimum of inconvenience to normal operations of Owner and public traffic. Walks, paved or landscaped areas over which temporary driveways cross shall, upon completion of the Work, be restored to their original condition with new construction. Temporary roadways shall be bridged over trenched areas.
- F. Provide continuous, lawful, safe, adequate and convenient access to the site. Contractor shall construct and maintain in good, safe, usable condition temporary roads, capable of supporting emergency vehicles, and appurtenances as required, and when no longer required, remove temporary construction and restore such areas to their original condition, or as otherwise specified in the Contract Documents.
- G. Conduct of Construction Personnel: Smoking is not permitted on project property, including the construction site.

### 3.2 HOURS OF WORK

- A. Hours of work shall be from 7:00 AM until 11:00 PM including Saturdays, Sundays and Holidays, except as indicated below and unless otherwise approved by the Owner.
- B. The Contractor shall comply with applicable local ordinances.

### 3.3 CONTRACTOR USE OF PREMISES

- A. General: Contractor will have limited use of premises, including Project Site Area for construction operations, as indicated on Drawings and as defined below.
  - 1. Owner Occupancy: Owner will occupy adjacent parking lots and buildings during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations.
  - 2. Site Access: Owner will designate access roads to site and will define limits within which Contractor shall control movements of his personnel. Access to the site shall generally be via existing roadways and paved surfaces which Contractor shall maintain and restore to original condition. Primary Access to the Project Site Area will be from Hancock Street via the roadway to and through Quincy Center MBTA parking lot and City Hall Annex parking lot from the north. Secondary access to the Project Site Area from the south may be used, only if the Contractor can secure a written agreement for construction easement from the south abutting property owner.
  - 2. Work Hours: Work shall not obstruct or adversely impact the City of Quincy and other Public parking, vehicular circulation and pedestrian circulation within the City Hall Annex west parking lot, to City Hall Annex and the Quincy Center MBTA parking lot during the hours of 8 AM until 7 PM, Monday through Friday. Work in these areas to be scheduled for weeknights after 7 PM and weekends and surfaces restored for parking and vehicular operations by each Monday at 7 AM.
  - 3. Pedestrian Access: Maintain north-south pedestrian access continuously along east side of MBTA right of way between Quincy Center MBTA Station and Granite Street.
  - 4. Public Access: Maintain access to existing walkways, streets and other adjacent occupied or used facilities. Do not close or obstruct walkways, streets or other occupied or used facilities without written permission from Owner and other authorities having jurisdiction.
  - 5. Driveways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - 6. Activities Affecting Owner's Operations: Provide a minimum of 72 hours' notice to City of Quincy of activities that will affect Owner's operations. Provide a minimum of 20 working days' notice to City of Quincy in advance of work that will involve building penetration and access for power and communication routing and connections.
  - 7. Do not disturb portions of Project Site Area beyond the limit of work.

8. Confine operations at the site to areas permitted by laws, by-laws, permits and contract limit lines.
  9. Do not encumber the site with materials or equipment.
- B. Off-Site Contractor Parking: Parking of Contractor's vehicles will not be allowed within Limit of Work nor within City Hall Annex west parking lot and the Quincy Center MBTA parking lot. Contractor shall be responsible for offsite parking arrangements, regulation and control of such parking and resulting traffic.
  - C. On-Site Delivery and Storage of Construction Materials: Schedule delivery of materials to site during for weekdays before 7 AM after 8 PM and weekends Assume full responsibility for protection and safekeeping of products stored on premises. Obtain and pay for use of additional storage or work areas needed for operations. Limit use of site to work and storage of materials for this project.
  - D. Site Drainage: Contractor shall be responsible for adequate site drainage during the entire construction period and shall use any appropriate temporary means that does not adversely affect construction progress or abutting property.
  - E. Storage outside Limit of Work: Do not use areas outside the Limit of Work area for temporary storage or structures without specific written permission from the Owner's Representative and Owner.

#### 3.4 EXISTING UTILITIES

- A. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  1. Notify Owner not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Owner's written permission.
- B. Immediately repair active existing utility lines (cables, conduit, ducts, and piping), damaged during the course of construction. Protect and maintain such active existing utilities in use, until relocation of same has been completed or utilities have been cut, capped, or prepared for new service connections, as applicable. Perform such repair and protection work at no additional cost to the Owner.
- C. If existing active utilities not indicated on the Drawings is unintentionally damaged, and such utility is to remain, immediately repair the damage and restore the utility to its original integrity. Reimbursement of cost for performing such repair will be made by an adjustment in the Contract Price in accordance with the General Conditions of the Contract.
- D. Adjustments as outlined above shall be based on the assumption that the Contractor has performed in a prudent manner at the time such damage occurred. If extra expense is incurred in protecting and maintaining utility lines not shown on the Drawings, nor revealed by a "Dig-Safe" inspection, an adjustment in the Contract Price shall be made.
- E. The Owner will cooperate and assist the Contractor in locating and identifying underground utilities. Contractor shall cooperate and participate in "Dig Safe" programs, notifying proper authorities before proceeding.

- F. If it becomes necessary to interrupt power, water line, sewer, gas or other utilities to adjacent buildings, notify the Owner's Representative and Owner's Project Manager at least four (4) days in advance. Schedule such interruptions at such times as will minimize disruption and inconvenience to users.

### 3.5 NOISE CONTROL

- A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum. Submit noise abatement program to Owner's Project Manager and Owner's Representative for review prior to use of noise generating equipment.
- B. Execute construction work by methods and by use of equipment that will reduce noise and which will provide minimum interference with neighborhood activities.
  - 1. Employ construction methods and equipment that will produce the minimum amount of noise.
  - 2. Equip air compressors with silencers, and power equipment with mufflers.
  - 3. Handle vehicular traffic and scheduling to reduce noise.
- C. Do not allow radio and electronic entertainment equipment to be operated at volume that makes ordinary conversation difficult at ten (10) feet from such equipment.

### 3.6 SAFETY AND DISPOSAL REQUIREMENTS

- A. Standards: Maintain project in accordance with State Building Code and local ordinances.
- B. Hazards Control: Store volatile wastes in covered metal containers and remove from premises. Prevent accumulation of wastes which create hazardous conditions. Provide adequate ventilation during use of volatile and noxious substances.
- C. Disposal: Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws. Do not burn or bury rubbish and waste materials on project site. Do not dispose of hazardous wastes such as solvents, mineral spirits, oil, paint, paint thinner in storm or sanitary drains. Do not dispose of wastes into streams or waterways.

### 3.7 ACCIDENT PREVENTION

- A. Comply with all Federal, State and municipal recommendations and requirements for safety and accident prevention, those of the Associated General Contractors of America and the American National Standards Institute (ANSI Standard A10.2). Conduct regular, frequent inspections of the site for compliance with safety regulations.
- B. Neither the Owner nor the Owner's Representative will be responsible for providing a safe working place for the Contractor, Subcontractors, or their employees, or any individual responsible to them for the Work.

### 3.8 WELDING AND CUTTING

- A. Where electric or gas welding or cutting work is done above or within ten (10) feet of combustible material or above space that may be occupied by persons, use interposed shields of incombustible material to protect against fire damage or injury due to sparks and/or hot metal.

- B. Place tanks supplying gases for gas welding or cutting at no greater distance from the work than is necessary for safety, securely fastened and maintained in an upright position where practicable. Such tanks, when stored for use, shall be remote from any combustible material and free from exposure to the direct rays of the sun or high temperatures. Storage shall be secured under lock and key, to prevent unauthorized use of gas and equipment.
- C. Maintain suitable fire extinguishing equipment near all welding and cutting operations. When operations cease for the noon hour or at the end of the day, thoroughly wet down the surroundings adjacent to welding and cutting operations. Properly protect any new materials, stored or installed, that are subject to water damage.
- D. Station a worker equipped with suitable fire extinguishing equipment near welding and cutting operations to see that sparks do not lodge in floor cracks or pass through floor to wall openings or lodge in any combustible material. Keep the worker at the source of work which offers special hazards for a minimum of thirty (30) minutes after the job is completed to make sure that smoldering fires have not been started.
- E. Place a qualified electrician in charge of installing and repairing electric and arc welding equipment.

### 3.9 MUNICIPAL POLICE SERVICES

- A. Make all necessary arrangements with the municipal police department in advance of times when regular, off-duty, or reserve police officers will be needed for traffic control or protection due to operations performed under this Contract.
- B. Pay police officers in accordance with rates established by the municipality for such services:
- C. Extend the Worker's Compensation Insurance and Employer's Liability Insurance required under the General Contract to cover police used on the Project.

### 3.10 STORAGE OF MATERIALS OFF SITE

- A. The Contractor, Subcontractors and Sub-subcontractors shall obtain prior written approval from the Owner through the Owner's Representative for permission to store materials to be incorporated in the Work, for which Progress Payments will be requested, at off-site locations. Any and all charges for storage, including insurance, shall be borne solely by the Contractor. Before approval, Owner will require proper proof of insurance and a letter in which is furnished:
  - 1. The names of the Contractor and/or Subcontractor or subordinate Subcontractor leasing the storage area.
  - 2. The location of such leased space.
  - 3. Description of the leased area: The entire premises or certain areas of a warehouse giving the number of floors or portions thereof.
  - 4. The date on which the material is first stored.
  - 5. The value of the material stored.
  - 6. Transfer of title for such materials in a form acceptable to the Owner.
- B. Requirements for storage facility at which materials will be stored off-site:
  - 1. The storage facility shall be a bonded warehouse.

2. The Contractor shall permit access to the storage facility to the Clerk of the Works upon request.
- C. Contractor, Subcontractors and subordinate Subcontractors shall provide prior to the request for payment for such stored materials, adequate advanced notice, to the Owner's Representative so that the Owner or Owner's Representative can inspect, at their convenience, the materials being stored at any location.
- D. Each sealed carton shall be marked with the Project name, the Owner's name and the Owner's Representative's name as they appear in the Agreement.
- E. A perpetual inventory shall be maintained for all materials held in storage for which payment has been requested.
- F. Payment for materials stored off site shall be at the sole discretion of the Owner. Any additional costs to the Owner resulting from storage of material off site for which payment is requested, such as, but not limited to, travel expenses and time for inspectors shall be back charged to, and paid by, the Contractor.

### 3.11 DUST CONTROL

- A. Maintain the construction site, stockpiles, access, detour, and haul roads, staging and parking area used for the Work, free of dust which would cause a hazard or a nuisance to those at the site or adjacent sites.
- B. Provide environmentally safe and positive methods and dust control materials to minimize raising dust from construction operations, and provide positive means to prevent air-borne dust from dispersing into the atmosphere.
- C. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- D. These provisions do not supersede any specific requirements for methods of construction or applicable regulations or general conditions set forth elsewhere in the Contract with regard to performance obligations of the Contractor.

### 3.12 CLEANING DURING CONSTRUCTION

- A. Execute cleaning during progress of work and at Substantial Completion, as required by General Conditions and as herein specified.
- B. Maintain premises and public properties free from accumulations of waste, debris and rubbish caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all exposed surfaces; leave project clean and ready for occupancy.
- C. Cleaning shall be in addition to cleaning specified under other sections and shall include all surfaces in which or to which the Contractor has had access.
- D. Refer to Sections of the Specifications for cleaning of specific products.
- E. Execute cleaning to ensure that the site and adjacent properties are maintained free from accumulations of waste materials and rubbish and windblown debris, resulting from construction operations.

- F. Provide on-site containers for collection of waste materials, debris and rubbish.
- G. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal areas off site.
- H. Handle materials in a controlled manner with as few handling as possible. Do not drop or throw materials from heights.
- I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning processes will not fall on wet newly painted surfaces, uncured caulking, sealants, adhesives, etc.

### 3.13 DEBRIS CONTROL AND REMOVAL OF RUBBISH

- A. Ensure that each Subcontractor engaged in the Work bears full responsibility for cleaning up during on a daily bases and immediately upon completion of his work, and removes all rubbish, waste, tools, equipment, and appurtenances caused by and used in the execution of his work; but this shall in no way be construed to relieve the General Contractor of primary responsibility for maintaining a clean site free of debris, leaving all work broom clean and in a condition satisfactory to the Owner's Representative and Owner.
- B. Initiate and maintain a specific program to prevent the accumulation of debris at the construction site, storage and parking areas, or along access roads and haul routes: Provide containers for deposit of debris and schedule periodic collection and disposal of debris. Prohibit overloading of trucks to prevent spillage on access and haul routes.
- C. Contractor shall make provisions for snow and ice removal, as required. In addition Contractor shall provide wheel-washing stations at site egress gates, as directed by the Project Manager, to maintain clean neighborhood streets.

### 3.14 POLLUTION CONTROL, GENERAL

- A. Provide methods, means and facilities required to prevent contamination of soil, water and atmosphere by the discharge of noxious substances from construction operations.
- B. Remediation of Spills: Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids. Excavate and dispose of contaminated earth off site and replace with suitable uncontaminated compacted fill and topsoil, in accordance with the requirements of Section 310000 - EARTHWORK.
- C. Take special measures to prevent harmful substances from entering public waters. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams or in sanitary or storm sewers.
- D. Provide systems for control of atmospheric pollutants. Prevent toxic concentrations of chemicals. Prevent harmful dispersal of pollutants into the atmosphere.

**END OF SECTION**

**FORM 011401  
ELECTRONIC RELEASE FORM**

To: [Contractor]  
[Street]  
[Town, State]

Date: [Date documents are transmitted]

Project: Lighting and Security Cameras at Hancock Cemetery, Quincy, MA

RE: Project Electronic Files

Project Electronic Files are made available to the undersigned with the following conditions:

The undersigned agrees to accept from Halvorson Design Partnership, Inc. the electronic files for the referenced project, as listed in the attached table, without any warranties, guarantees and/or representations of any nature whatsoever regarding the correctness, accuracy and/or completeness of any information contained therein.

The undersigned further agrees that such information shall be used as reference material only and then only for the referenced project and not for any other projects or future additions to the referenced project, without express written consent from Halvorson Design Partnership, Inc. for each instance.

The undersigned further agrees to release, indemnify, hold harmless and defend Halvorson Design Partnership, Inc. with respect to any claims, costs, losses, damages and/or liabilities arising out of, or relating to the use, misuse, modification, interpretation, misinterpretation and/or misrepresentation of any such information.

The undersigned further agrees to the requirements and limitations for the use of Project Electronic Files as stated in Section 011400 - Work Restrictions.

Sincerely,  
Halvorson Design Partnership, Inc.

Accepted and Agreed to:

\_\_\_\_\_  
(General Contractor)

By: \_\_\_\_\_

Title: \_\_\_\_\_

END OF FORM

**SECTION 012100  
UNIT PRICES**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. This Section includes administrative and procedural requirements for unit prices and estimated quantities.
- B. Related Sections include the following:
1. Document 001117 – INSTRUCTIONS TO BIDDERS, for additional instructions regarding unit prices and estimated quantities and bids.
  2. Document 001118 – FORM FOR GENERAL BID, for additional instructions regarding unit prices and estimated quantities and bids.
  3. Section 012200 – UNIT PRICE PROPOSAL SHEET, for unit prices and estimated quantities.
  4. DIVISION 02 through DIVISION 50 for procedures, materials, and execution requirements related to unit price work.

1.3 DEFINITIONS

- A. Unit Price: A unit price is an amount proposed by Bidders on the Bid Form as a price per unit of measurement for materials or services added to the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased. If the estimated quantities of Work required are decreased, the value of the Unit Price will be reduced as described on the Unit Price Proposal Sheet.

1.4 PROCEDURES

- A. Each unit price includes all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections and Section 012200 – UNIT PRICE PROPOSAL SHEET for work that requires establishment of unit prices and estimated quantities. Methods of measurement and payment for unit prices and estimated quantities are as follows:
1. For work covered by scheduled quantities, notify the Owner and Architect a minimum of 24 hours in advance of the performance of such work.
  2. Document such work in writing, identifying type of work, quantity and location of work. Submit documentation on Contractor's letterhead.
  3. All documentation of work covered by scheduled quantities will be subject to verification and approval by the Owner and Architect.

4. In order to be considered for payment, documentation for work covered by scheduled quantities shall be submitted within one month of performance of such work. Requests for payment of such work submitted more than one month after the work has been performed will not be accepted.
  5. Only Documentation signed and verified by the Contractor, Trade, and the Owner's Representative will be considered valid. Documentation not signed by all these parties will be considered invalid.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and estimated quantities and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. Schedule of Unit Prices and Estimated Quantities:
1. Specification Sections referenced in the Unit Price Proposal Sheet contain requirements for materials described under each unit price.
  2. A Schedule of unit prices and estimated quantities to be proposed by Bidders follows this section.
- E. Refer to Document 001117 – INSTRUCTIONS TO BIDDERS, Document 001118 – FORM FOR GENERAL BID, for additional information regarding unit prices and estimated quantities.
- 1.5 SCHEDULE OF UNIT PRICES AND ESTIMATED QUANTITIES
- A. See Section 012200 – UNIT PRICE PROPOSAL SHEET.

**PART 2 - PRODUCTS (Not Used)**

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**PART 3 - EXECUTION (Not Used)**

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**END OF SECTION**

**SECTION 012200  
UNIT PRICE PROPOSAL SHEET**

1. The following unit prices as defined in the specifications are designated for items of work on the basis of unknown quantities or quantities estimated by the Designer. These unit prices will be used to add or to deduct from the dollar amounts shown, depending on whether the actual amount is greater or less than the estimated amount. UNIT PRICES GIVEN HEREIN SHALL BE FOR ADDITIONAL WORK ONLY. DECREASED WORK SHALL BE AT THE "ADD" PRICE LESS FIFTEEN PERCENT (15%).

UNIT PRICE NUMBER	SPECIFICATION SECTION AND DESCRIPTION	ESTIMATED QUANTITY	UNIT MEASURE	UNIT PRICE DOLLARS/CENTS	TOTAL AMOUNT FOR ESTIMATED QUANTITY - DOLLARS/CENTS
	Section 260000 –Electrical: Pedestrian Pole mounted Light on Concrete Foundation	16	EA		
	Section 260000 - Electrical: Security Camera and Pole on Concrete Foundation	4	EA		
	Section 0260000 - Site Electrical: 1-1/4" PVC Conduit, Exterior underground	1,000	LF		
	Section 260000 - Electrical: 1- 1/4" EMT conduit, Interior	300	LF		
	Section 260000 - Electrical: 1- 1/4" MC cable, Interior	50	LF		
	Section 260000 - Electrical: #4 Conductor	6000	LF		
	Section 260000 - Electrical: Single Mode Fiber Optic Cable	1,000	LF		
	Section 260000 - Electrical: CAT 6 Coaxial Cable	1,000	LF		
	Section 321313 – Chain Link fence: Black Vinyl-Coated Chain Link Fence	275	LF		
	Section 321313 - Chain Link Fence: Black Vinyl-Coated Chain Link Fence Double Gate	1	LS		
	Section 321200 – Bituminous Concrete Sidewalk on Compacted Gravel Borrow Base	400	SY		
	Section 329200 – Seeded Lawn over 6" Off Site Base Loam	620	SY		

2. The unit prices requested herein shall include their pro-rata share of all costs for the indicated items of work, including such items as overhead, superintendence, general conditions, profit, bond, labor, materials, payments to and coordination of subcontractors, equipment costs, disposal fees, etc., and all other work incidental thereto.
3. Any unit price proposal that contains a unit price which is unduly high or low may be rejected as unbalanced, refer to Document 001117 – Instructions to Bidders.
4. The Base Bid shall include the estimated quantities listed above in addition to all work shown on the Drawings and as specified.
5. The total amount for estimated quantities above as applicable shall be included in the amount to be entered in the Form for General Bid, Paragraph B.

\*\*\*THIS FORM MUST BE SUBMITTED WITH THE GENERAL BID FORM\*\*\*

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NAME OF CONTRACTOR (PLEASE PRINT)

**SECTION 012400  
SCHEDULE OF VALUES**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

- A. The Work of this Section includes requirements for the following procedures:
1. Preparation and submittal of the Preliminary and Final Schedule of Values
- B. Related work includes, but is not limited to, the following work under other Sections:
1. Requirements for construction schedules: Section 013200 – Construction Progress Documentation.
  2. General procedures for submittals: Section 013300 – Submittal Procedures.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SUBMITTALS

- A. Prepare and submit the following submittals in accordance with the requirements of Section 013300 – Submittal Procedures.
- B. Schedule of Values:
1. Schedule of Values shall be typewritten on 8-1/2 by 11 inch white paper.
  2. Submit to the Architect three (3) copies of each Schedule of Values within 7 days of receipt of Notice to Proceed.
- C. List of Subcontractors and Sub-subcontractors: Attached to the Preliminary Schedule of Values shall be a list of the names, addresses (and whether individual, partnership or corporation) of each Subcontractor or Sub-Subcontractor who is to perform all or any part of each subdivision. In the event any Subcontractors, or Sub-subcontractors are not known at the time said schedule is prepared, an amended or supplementary list containing the names of the Subcontractors and Sub-Subcontractors involved and indicating their division of the Work shall be furnished to the Architect as soon as the information is available. A code

number for identification on requisitions shall be used to identify the Contractor, each of the Subcontractors and subordinate Subcontractors, and shall be shown in each requisition where any part of the Work performed by the Contractor, such Subcontractor, Sub-Subcontractors or material supplier is incorporated in the amount of the requisition for which payment is requested.

- D. Monthly Updates: Submit to the Owner with the Schedule of Values on a monthly basis such schedules of quantities and costs, payrolls, reports, estimates, records, and other data as the Owner may request concerning work performed or to be performed under this Contract. The Schedule of Values shall be submitted at the same time as the updated CPM Schedule showing the current status of the work, as required under Section 013200 – Construction Progress Documentation.

## 1.5 SCHEDULE REQUIREMENTS

- A. General: Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project CPM Schedule. Provide line items for principal subcontract amounts, where appropriate, and for portions of the work designated in this Section.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section. Identify each line item by Specification Number and Title, and by portion of the Work of that Section where the Work of a Section is allocated to more than one line item.
- C. The Schedule of Values shall be arranged in vertical columns identified with titles, including Names of Items; Original Amounts, Percent Completed To Date; Previous Payments; Current Requests; and Balance Not Yet Requested. A summary of the total amount due to date and the amount of the five percent retained shall be included in the statement which shall be signed by the Contractor. A separate sheet shall be included with each requisition showing status of work covered by approved Change Orders. The Schedule of Values shall be revised if later found by the Architect to be inaccurate.
- D. In preparing the Schedule, each sub-division or classification of the Work shall be identified by code number referring to each individual Section (or Sub-Section where applicable) of the Specifications. The Schedule of Values shall be prepared in accordance with AIA Documents G702 and G703.
- E. Initial values will be recognized to be an accurate accounting of the value of the work. Upon request by the Architect, support values given with data that will substantiate their correctness.
- F. Identify quantities of designated materials or materials stored on which payment is expected to be made.
- G. Use monthly submissions of Schedule of Values only as basis for Contractor's Application for Payment.

## 1.6 PREPARING SCHEDULE OF VALUES

- A. General Procedures:
  - 1. Prepare Preliminary Schedule of Values for review by Architect, Owner and Owner's Project Manager.
  - 2. Incorporate requested modifications to produce a Final Schedule of Values, which will become the basis for documenting the progress of the Work with each Application for Payment.
  - 3. Update Final Schedule of Values as necessary to reflect changes in the Work.
- B. Itemize separate line item cost for each of the general cost items as specified in this Section.
- C. Breakdown installed costs into:
  - 1. Delivered cost of product
  - 2. Total installation cost, with overhead and profit.
  - 3. Construction phase.
  - 4. Note that the Owner is exempt from Sales and Use Tax for all materials incorporated into the Work.
- D. For each line item which has installed value of more than \$20,000.00 breakdown costs to list major products, components, or operations under each line.
- E. Sum of costs of all items listed in schedule shall be equal to total Contract Sum.
- F. Each item shown on an Application for Payment Schedule of Values shall also appear on the CPM Schedule.

## 1.7 LINE ITEMS FOR SCHEDULE OF VALUES

- A. Work Covered in Division 1: Itemize separate line item cost for each of the following general cost items:
  - 1. Performance and Payment Bonds for General Contractor and Subcontractors.
  - 2. Field engineering; photographic documentation.
  - 3. Coordination; project management.
  - 4. Preparation of schedule and periodic updates.
    - a. If periodic updates of schedule are not performed in a timely manner, the amount shown on the Schedule of Values for this line item shall be forfeit.
  - 5. Weather protection; temporary fence.
  - 6. Temporary heat, water, power and lighting.
  - 7. Temporary office facilities; temporary sanitary facilities.
  - 8. Construction aids, including staging, scaffolding, shoring.
  - 9. Project sign.
  - 10. Construction waste management.
  - 11. Cutting and patching; selective demolition
  - 12. Final cleaning.
  - 13. Punchlist preparation and response.

14. Maintenance of as-built documents for site work and preparation of closeout documents.
  15. Overhead.
  16. Other items of work as requested by the Architect or Owner.
- B. Work Covered in Divisions 2 through 50: Provide at least one separate line item for each Section of the Specifications. Section line items shall be further subdivided into separate line items as follows:
1. Identify material costs separately from labor costs.
  2. Provide separate line items for the following where applicable:
    - a. Submittals
    - b. Maintenance of as-built documents
    - c. Preparation of closeout documents
    - d. Operations and Maintenance Manuals;
    - e. Training
    - f. Other items of work as requested by the Architect or Owner.
  3. For each line item which has installed value of more than \$20,000.00 break down costs to list major products, components, or operations under each line.

**PART 2 - PRODUCTS [NOT USED]**

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**PART 3 - EXECUTION [NOT USED]**

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**END OF SECTION**

**SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:

1. Responsibility for coordination of the Work.
2. Surveying and engineering.
3. Coordination Drawings.

- B. Related work includes, but is not limited to, the following work under other Sections:

1. General requirements for submittals: Section 013300 – Submittal Procedures.

1.3 SUBMITTALS

- A. Prepare and submit documentation in accordance with Section 013300 – SUBMITTAL PROCEDURES.

- B. Drawings:

1. Survey of existing project conditions: Submit a set of reproducible drawings and certificate signed by registered engineer or land surveyor, certifying that elevations and locations of improvements are in conformance, or non-conformance with Contract Documents.
2. Survey of as-built conditions: Certified survey showing all as-built dimensions, locations, angles and elevations of construction, to be submitted at Substantial Completion of the Work.
3. Coordination Drawings as described in this Section.

- C. Certifications required for Work described in this Section:

1. Field Engineering: Submit name and address of surveyor and professional engineer to Owner's Representative.

1.4 COORDINATION

- A. General: The Contractor shall be responsible for the proper fitting of all work and the coordination of the operations of all trades, Subcontractors, material installers and equipment engaged upon the Work. He shall perform or cause Subcontractors to perform all cutting, fitting, adjusting and patching necessary to make the several parts of the Work come to-

gether properly and to fit the Work to receive or be received by that of other contractors.

- B. Project Supervision: The Contractor shall give his personal supervision to the Work and shall assign the following site staff for the Project:
  - 1. Full-time Superintendent: A superintendent licensed in the Commonwealth of Massachusetts, with the authority to act on behalf of the Contractor. The Superintendent shall supervise the Work at all times throughout the duration of the Project.
  - 2. Quality Control Monitor: A member of Contractor's full-time on-site staff assigned to monitor the quality of the Work. The Quality Control Monitor may also be assigned to oversee and document construction waste removal.
  - 3. The Contractor shall also provide an adequate staff for the proper coordination and expediting of the Work.
- C. Coordination with Subcontractors: The Contractor shall be in charge of the entire Work and shall be responsible for the prompt coordination of trades, including his own forces and his various Subcontractors.
  - 1. The above notwithstanding, each Subcontractor shall assume responsibility for the correctness and adequacy of his work. Each Subcontractor shall be responsible for and pay for all damage done by his work and his workers.
  - 2. No Subcontractor shall be permitted on the site without the Superintendent present to supervise the Work.
- D. The Contractor's responsibility for the coordination of all work under the Contract shall be complete, and shall extend to all modifications in the Work, whether or not such modifications entail a change in the Contract Price. Where the Contract Documents allow an optional material or method of performing a portion of the Work, or where the Contractor is ultimately allowed or directed to perform a part of the Work using a substitute material or method, the Contractor shall provide all other coordination and additional work that such change necessitates, without any additional cost to the Owner.

#### 1.5 SURVEYING AND ENGINEERING, GENERAL

- A. The Contractor shall employ a project engineer who is a qualified land surveyor registered to practice in the Commonwealth of Massachusetts, who shall establish and maintain grades and levels and permanent bench marks. In addition, the Contractor shall designate one person from within his organization, with engineering experience, who shall do the usual engineering work required, including leveling, checking, and verifying wall and partition lines, elevations, etc.
- B. Prior to commencement of excavation or filling work on the site, the project engineer shall check locations of structures and other fixed items with regard to property lines and other existing conditions. The Contractor shall be fully responsible for reporting to the Owner's Representative discrepancies between the dimensions and/or locations indicated on the Contract Drawings and those as they actually exist on the site.
- C. After verification of all dimensions and locations, the Contractor shall submit to the Owner's Representative such verification in written form bearing the professional stamp of the surveyor. Failure to do so shall mean that the Contractor assumes responsibility for all corrective measures required at no addition to the Contract amount.
- D. The Contractor shall lay out the Work and shall be responsible for all lines, elevations, and measurements of the building, grading, paving and other work under the Contract. He shall

exercise proper precaution to verify the dimensions shown on the Drawings before laying out the Work and will be held responsible for any error resulting from his failure to exercise such precaution.

## 1.6 FIELD ENGINEERING REQUIREMENTS

- A. General: Provide professional field engineering services, establish grades, lines and levels, by use of recognized engineering survey practices.
1. The Contractor's attention is directed to the fact that Drawings have been prepared based on the assumption that all existing walls are set in orthogonal relationship to each other. The Contractor will be responsible for verifying the precise angle between existing walls, and bring to the attention of the Owner's Representative any conditions that deviate from orthogonal.
  2. Submit surveys and documentation as described herein.
- B. Scope of Field Engineering:
1. Site features:
    - a. Existing grades, including grades immediately adjacent to existing building.
- C. Qualifications of Surveyor or engineer: Qualified engineer or registered land surveyor, acceptable to Owner's Representative and the Owner.
1. Registered professional engineer of the discipline required for the specific service on the Project, licensed in the Commonwealth of Massachusetts.
- D. Survey Reference Points:
1. Datum: Location of control datum to be used as reference point for horizontal and vertical survey measurements is shown on Drawings.
  2. Locate and protect control and reference points prior to starting site work, and preserve all permanent reference points during construction.
    - a. Make no changes or relocations of control points without prior written notice to Owner's Representative.
  3. In the event that any reference point is lost or destroyed, or requires relocation due to necessary changes in grades or construction, perform the following actions without delay:
    - a. Report change to Owner's Representative immediately.
    - b. Replacement of reference point shall be performed by surveyor, as directed by Owner's Representative.
  4. Project Survey Requirements:
    - a. Establish a minimum of two permanent benchmarks on the site, referenced to data established by survey control points.
    - b. Establish lines and levels, locate and lay out by instrumentation and other appropriate means.
    - c. Verify layouts periodically using the same means as those by which they were established.

E. Records:

1. Maintain a complete, accurate log of all control and survey work as it progresses.
2. Prepare and submit a survey of existing conditions and a final survey of as-built conditions containing all relevant horizontal and vertical dimensions and reference point data.

**PART 2 - PRODUCTS [NOT USED]**

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**PART 3 - EXECUTION [NOT USED]**

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**END OF SECTION**

**SECTION 013119  
PROJECT MEETINGS**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:
1. Organizational meetings.
  2. Project meetings.
  3. Pre-Installation conferences
  4. Post-construction meetings
- B. Related work includes, but is not limited to, the following work under other Sections:
1. Requirements for construction schedules: Section 013200 Construction Progress Documentation.

**PART 2 - PRODUCTS**

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2.1 ORGANIZATIONAL MEETINGS

- A. General: The Owner's Project Manager will schedule pre-construction organizational meetings, periodic Project meetings, specially called meetings throughout the progress of the Work, and post-construction meetings. Representatives of the Contractor shall attend all such meeting. Subcontractors shall attend only if requested by the Owner's Representative.
- B. Pre-Construction Meeting: Immediately following award of Contract, the Owner's Representative will call one or more preliminary organizational meetings, during which detailed procedures will be worked out for submission and review of Shop Drawings and samples, format and extent of the Progress Schedule and Schedule of Values, format and methods for progress payment requisitions, channels of communication between Owner, Owner's Representative's and Contractor's personnel, and other routines to be followed during construction. The Owner's Representative will then issue a directive summarizing such procedures.

2.2 PROJECT MEETINGS

- A. The Owner's Representative shall schedule and meet regularly with the Owner, the Owner's Project Manager and the Contractor at the site of the Work during the course of the Contract for the purpose of progress review, coordination of Shop Drawing schedules,

sample submittals, and other items of work requiring such coordination. The dates of such meetings shall be as mutually agreed upon between the Owner, Contractor and the Owner's Representative. Contractor shall require Subcontractors to attend such meetings if requested by the Owner's Representative.

- B. The Contractor shall take minutes of such meetings and shall distribute copies of the minutes to all concerned.
- C. Contractor's and Subcontractor's representatives attending such meetings shall include the job superintendent or other responsible party approved by the Owner's Representative. Such representatives shall be empowered to make, at these meetings, definite decisions binding upon their respective employers regarding all matters pertaining to work under this Contract.
- D. The Contractor shall furnish the Owner, the Owner's Project Manager and the Owner's Representative, in writing, the names, addresses, and telephone numbers of Contractor's and principal Subcontractors' personnel to be contacted in the event of an out-of-hours emergency at the site. He shall also maintain a similar list readily visible from the outside of the field office.

### 2.3 PREINSTALLATION CONFERENCES

- A. Pre-Installation Conferences: Conduct pre-installation conferences at site prior to construction activities that require coordination.
  - 1. Schedule the conference to occur after submittals have been approved for the materials or systems.
  - 2. Installers, manufacturer's representatives, and fabricators of materials or systems affected shall be required to attend. Advise Designer of scheduled meeting dates.
  - 3. Do not allow affected work to proceed if the conference cannot be successfully concluded. Initiate actions necessary to resolve impediments to performance of the work and reconvene the conference at the earliest feasible date.
- B. Refer to individual specifications sections for additional requirements.

### 2.4 POST-CONSTRUCTION MEETINGS

- A. Not less often than every three months, starting with the date of Substantial Completion and continuing for one year thereafter, representatives of the Contractor and the Subcontractors shall meet with the Owner's Representative and Owner's Project Manager at the site in accordance with an agreed-upon schedule in order to inspect the Work and to plan correction of any deficiencies or failures discovered during this period.
- B. Representatives of the Contractor and Subcontractors attending such meetings shall be the same persons, or shall have the same powers and authority, as those attending job meetings prior to the date of Substantial Completion.

**END OF SECTION**

**SECTION 013200  
CONSTRUCTION PROGRESS DOCUMENTATION**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:

1. Time for Completion.
2. Sequencing requirements.
3. Phasing requirements.
4. Requirements for scheduling closeout activities.
5. Critical Path Method Schedule preparation and submission.
6. Photographic documentation of construction.

- B. Related work includes, but is not limited to, the following work under other Sections:

1. Section 011400 – WORK RESTRICTIONS: Hours of work and related scheduling criteria.
2. Section 012400 – SCHEDULE OF VALUES: Allocation of portions of the Work as line items in applications for payment.
3. Section 013100 – PROJECT MANAGEMENT AND COORDINATION: Contractor responsibility for coordinating the Work.
4. Section 013119 – PROJECT MEETINGS: Scheduling construction-related meetings.
5. Section 013300 – SUBMITTAL PROCEDURES: Coordination of submittal schedule with construction.
6. Section 014000 – QUALITY REQUIREMENTS: Special sequencing requirements required for inspection of building components prior to concealment.
7. Section 017700 – CLOSEOUT PROCEDURES: Requirements for Substantial Completion and Final Completion.

1.3 SUBMITTALS

- A. Preliminary Construction Schedule: Within 5 calendar days following receipt of the Notice to Proceed, submit a pdf electronically and two paper copies for review by the Owner, Project Manager and the Owner's Representative. This preliminary schedule shall include the project contract dates, milestones, long lead items, major work activities and a critical path to completion.

1. Acceptance of the Preliminary Construction Schedule by the Owner, Project Manager and Owner's Representative shall be a prerequisite to certification of the first Application for Payment.

- B. Complete and Detailed Construction Schedule: Within 30 calendar days following receipt of the Notice to Proceed, and at least 15 calendar days prior to submitting the second Application for Payment, submit a pdf electronically and two paper copies of the complete and detailed schedule, to show entire schedule for entire construction period.
  - 1. Acceptance of the Complete and Detailed Construction Schedule by the Owner, Project Manager and Owner's Representative shall be a prerequisite to certification of the second Application for Payment.
- C. Monthly Schedule Update: With each monthly Application for Payment, submit a schedule update of the accepted Complete and Detailed Construction Schedule accompanied by a written narrative reporting on the progress of the Work and a pdf electronically and two paper copies of the Monthly Schedule Update.
  - 1. Acceptance of the Updated Schedule each month by the Owner, Project Manager and Owner's Representative shall be a prerequisite to certification of the monthly Application for Payment.
- D. Weekly Construction Field Reports: Submit two copies of the current week's field reports to the Owner's Project Manager and the Owner's Representative at the end of each week. (Electronic submission is acceptable)
- E. Special Reports: Submit two copies of special reports of unusual events at the site directly to Owner's Project Manager and a copy to the Owner's Representative, on the day of the occurrence. Distribute additional copies of report to parties affected by the occurrence.
- F. Construction Photographs: Submit construction photographs as specified herein.

#### 1.4 TIME FOR COMPLETION

- A. It is understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion are essential conditions of this Contract, and it is further mutually understood and agreed that the Work embraced in this Contract shall be commenced by the date specified therein.
- B. The Contractor agrees that said Work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of the same, taking into consideration the usual industrial and climatic conditions prevailing in this locality.
- C. It is further agreed that time is of the essence of each and every portion of the Contract and of the Contract Documents wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new limit fixed by such extension shall be of the essence of this Contract.

## **PART 2 - PRODUCTS**

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### 2.1 CRITICAL PATH METHOD SCHEDULE (CPM) GENERAL

- A. The purpose of the Construction Schedule shall be to:
1. Assure adequate planning, scheduling and reporting during execution of the work by the Contractor;
  2. Assist the Contractor, Owner's Representative, Project Manager and Owner in monitoring the progress of the work and evaluating proposed changes to the Contract and the Construction schedule;
  3. Assist the Owner, Project Manager, Owner's Representative and the Contractor in the preparation and evaluation of the Contractor's monthly progress payments.
- B. The Construction Schedules shall employ the Critical Path Method (CPM) for the planning, scheduling and reporting of the work to be performed under the contract and shall meet the following requirements:
1. The schedule shall be produced utilizing the most current version of Primavera Project Planner software system or equivalent and the data fully transferable to Primavera Project Planner.
  2. The type of schedule shall be time scaled Precedence Diagramming Method (PDM) with Finish to Start with zero (0) lag dependency relationship.
  3. Activity duration shall be in units of whole working days and shall be limited to a minimum of one (1) and a maximum of twenty (20) working days for each activity.
  4. The schedules and the corresponding completion dates shall meet the contract duration (remaining contract duration for the monthly updates) of the project. Failure by the Contractor to include any element of work required for performance of the Contract shall not excuse the General Contractor from completing all work within the Contract Time. Under no circumstances, shall the Contractor be entitled to an equitable adjustment in the event of failing to achieve an early completion schedule.
  5. The Contractor shall review the planned activity coding and activity ID format with the Project Manager prior to the development of the Detailed Construction Schedule. At a minimum, the Project Manager will require the following coding: Area, Location/Phase/Shift, Work Type/Trade, CSI Code, and a separate code for each subcontractor.
  6. Proposed durations assigned to each activity shall be the Contractor's best estimate of time required to complete the activity considering the scope and resources planned for the activity, utilizing the appropriate workday calendar.
  7. Seasonal weather conditions shall be considered and included in the planning and scheduling of all work influenced by high or low ambient temperatures and/or precipitation to ensure completion of all work within the Contract time. Seasonal weather conditions shall be determined by an assessment of average historical climatic conditions based upon the preceding ten (10) year records published for the locality by the National Ocean and Atmospheric Administration (NOAA).
  8. The OPM's acceptance of the Construction Schedule shall not relieve the Contractor of responsibility for timing, planning and scheduling of the Work, nor impose any duty on the Owner's Representative or Owner with respect to the timing, planning or scheduling of the Work.

## 2.2 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Within 5 calendar days following receipt of Notice to Proceed, prepare and submit for review prints a pdf electronically of the Preliminary Construction CPM Schedule covering the first 90 days of construction. The schedule shall be neatly organized and plotted, time-scaled from left to right on standard size sheets. The Preliminary Construction Schedule shall cover the following phases and/or activities:
1. Proposed mobilization, procurement and planned construction within the first 90 days after Notice To Proceed.
  2. Include a summary bar for major areas of the remainder of the Work and a cash requirement prediction based on indicated activities.
- B. The Preliminary Schedule shall be incorporated into the Complete and Detailed Schedule including all revisions directed by the Owner, Project Manager and Owner's Representative.

## 2.3 COMPLETE AND DETAILED CONSTRUCTION SCHEDULE

- A. Prepare and submit a comprehensive, fully developed Complete and Detailed CPM Construction Schedule within 30 days after Notice to Proceed and at least 15 days prior to the second Monthly application.
1. The Complete and Detailed schedule shall incorporate the accepted Preliminary Construction Schedule with the Owner/Project Manager/Owner's Representative's comments
  2. Schedule shall be neatly organized and plotted time scaled from left to right on Project standard size sheets with suitable notation relating the interface points among sheets.
  3. The General Contractor's Schedule shall consist of, but not be limited to, the following:
    - a. Proposed procurement, submittal preparation, submittal review, fabrication & delivery, construction, testing, commissioning, and permitting activities.
    - b. Proposed durations for activities.
    - c. Proposed sequencing of activities (predecessors & successors).
    - d. Milestone events as required by the Contract Documents and Division 1 of the Specifications.
  4. The following shall be depicted on the Schedule for each activity:
    - a. Concise description of the work represented by the activity (maximum forty-eight (48) characters). The work related to each activity shall be limited to one work trade and one area. All descriptions shall include area designations.
    - b. In developing the Schedule, the Contractor shall be responsible for assuring that subcontractor and supplier work at all tiers, as well as its own work, is included in the Schedule.
    - c. The Schedule as developed shall show the sequence and interdependence of activities required for complete performance of the work. The Contractor shall be responsible for assuring that all work sequences are logical and the Schedule shows a coordinated plan of the work.
    - d. Each activity shall have only one responsible party and will be coded accordingly.
  5. For the purposes of utilizing schedule targets, activity id's shall not be modified.
  6. The schedule shall employ retained logic.
  7. Any float suppression techniques identified shall be corrected by the Contractor.

8. The Contractor shall utilize logic, durations, and appropriate calendar assignment to forecast dates, not activity constraints.

#### 2.4 MONTHLY SCHEDULE UPDATE REPORTS

- A. Monthly Schedule Update Report: Evaluate the status of the work as of the 25th of each month to show actual progress and to identify problem areas. Update the Complete and Detailed Construction schedule and print a schedule summary. Include approved Change Orders and Construction Change Directives within the updated schedule
- B. The Contractor shall furnish sufficient forces, offices, facilities and equipment at no additional cost to the Owner, and shall work such hours as necessary, within any local restrictions or agreements incorporated into the Contract, to ensure the prosecution of the work in accordance with the current monthly Project Schedule Update. Should the monthly update show that the Contractor is fourteen (14) or more work days behind schedule, the Contractor shall prepare a Recovery Schedule at no additional cost to the Owner explaining and displaying how the General Contractor intends to reschedule the work in order to regain compliance with the contract. The provision of this paragraph may include the Contractor increasing the hours of work, the number of shifts, overtime operations and/or the amount of construction plant and equipment or working on Saturdays, Sundays and holidays, within agreed working hours or variance granted, provided the General Contractor gives reasonable notice to the Owner.

#### 2.5 RECOVERY SCHEDULE

- A. When directed by the Project Manager/Owner's Representative, the Contractor shall develop a Recovery Schedule with a detailed narrative for all the remaining work based on the last accepted Monthly Schedule Update. The Recovery Schedule shall represent the Contractor's current work sequence plan and shall forecast completion of the remaining work within remaining contract durations. The Recovery Schedule narrative shall enumerate the Contractor's work plan including increases to crew sizes and/or extended shifts to complete work within remaining contract durations. The Recovery Schedule shall conform to requirements set forth in Paragraph 1.04 (Complete and Detailed Construction Schedule).
- B. The Contractor shall be responsible to develop mitigation measures for all delays, regardless of the responsibility for the delays, and to identify all time and cost impacts to the work associated with those mitigation measures. Whenever it is possible for the Contractor to mitigate delay without added cost, the Contractor shall do so. The Contractor shall mitigate all delays as efficiently and economically as possible, with the objective of minimizing both the time and cost impact of the delay, regardless of the responsibility of the delay.
- C. Unless circumstances otherwise require, the Contractor shall not pursue mitigation action for which it expects the Owner/Owner's Representative to be liable, prior to notifying the Owner/Owner's Representative and receiving Owner/Owner's Representative authorization to proceed with the mitigation action. Any action taken by the Contractor prior to receiving approval from the Owner/Owner's Representative shall be at the Contractor's risk.

## 2.6 WEEKLY CONSTRUCTION REPORTS

- A. Prepare a weekly construction report, recording events at the site. Report the following information, as applicable.
1. List of subcontractors at the site, and approximate count of personnel.
  2. High and low temperatures, general weather conditions (when exterior work is in progress)
  3. Meetings and significant decisions.
  4. Accidents, unusual events, and emergency procedures.
  5. Stoppages, delays, shortages, losses.
  6. Meter readings and similar recordings.
  7. Services connected, disconnected.
  8. Orders and requests of governing authorities.
  9. Change Orders received, implemented.
  10. Equipment or system tests and start-ups.
  11. Partial Completions, occupancies.
  12. Substantial Completions authorized.
- B. At the end of each week, compile the weekly report. Have the Contractor's Superintendent sign the reports and prepare a brief outline of the Work anticipated for the coming work week. Submit 1 copy to the Owner/Owner's Project Manager and place 1 copy in the Project Record Documents file.

## 2.7 CONSTRUCTION PHOTOGRAPHS

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.
- B. Photographer: Engage a qualified photographer to take construction photographs.
- C. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- D. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
1. Date and Time: Include date and time in file name for each image.
  2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Owner's Representative and Owner.
- E. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Owner's Representative.

1. Flag construction limits before taking construction photographs.
  2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
  3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- F. Periodic Construction Photographs: Take (30) thirty photographs monthly, with timing to coincidewith the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- G. Final Completion Construction Photographs: Take (20) twenty color photographs after date of Substantial Completion for submission as project record documents. Owner's Representative and Owner will inform photographer of desired vantage points.

### **PART 3 - EXECUTION**

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#### **3.1 SCHEDULING THE WORK**

- A. The Contractor shall perform the Work in accordance with the approved CPM Schedule.
1. If during the progress of the job the Contractor misses a start date of an activity on the critical path, the Contractor shall, within five (5) working days, advise the Owner's Representative in writing of action proposed to bring the Work up to schedule, and shall submit a revised CPM Schedule indicating such action, together with a typed list of such revisions.
  2. If the Contractor fails to submit a revised schedule within the specified time or if the Owner's Representative is not convinced of the efficacy of the measures proposed, the Owner may, at its option, require the Contractor to accelerate the progress of the Work, without additional cost to the Owner, by increasing the work force or the hours of work, or by other reasonable means approved by the Owner's Representative.

**END OF SECTION**

**SECTION 013300  
SUBMITTAL PROCEDURES**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:

1. Submittal schedule
2. Product data
3. Shop drawings
4. Samples
5. Colors and finishes
6. Calculations
7. Informational submittals
8. Action on submittals.
9. Substitution requests.

- B. Related work includes, but is not limited to, the following work under other Sections:

1. Availability and restrictions for use of electronic copies of Contract Document: Section 011400 – Work Restrictions.
2. Specific requirements for submittal of construction schedules: Section 013200 Construction Progress Documentation.
3. Specific requirements for submittal of schedule of values: Section 012400 – Schedule of Values.
4. Requirements for submittal of coordination drawings: Section 013100 – Project Management and Coordination.
5. Submittal of final record drawings and other documents: Section 017839 – Project Record Documents.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Owner's Representative's responsive action. Action submittals include product data, shop drawings and samples.
- B. Informational Submittals: Written information that does not require Owner's Representative's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals include calculations and other informational submittals described in this Section.
- C. Substitutions: Changes in products, materials, equipment and methods of construction from those required by the Contract Documents, as proposed by the Contractor and not consid-

ered "or equal". Refer to definition of "or equal" in Section 011100 – Summary of Work.

#### 1.4 SUBMITTALS

##### A. Submittal Schedule:

1. Within 10 calendar days after signing the Agreement, prepare and submit for the Owner's Representative's approval a schedule of Shop Drawings, Product Data and Samples required to be submitted for the Work.
  - a. The schedule shall indicate by trade the date by which final approval of each item must be obtained, and shall be revised as required by conditions of work, subject to the Owner's Representative's approval.
  - b. The schedule shall be derived from the Contractor's CPM Schedule.
2. The Owner's Representative's review, including Consultant's review period, will not exceed 14 working days (excluding weekends & holidays) from the date on which the Owner's Representative receives the submission. Contractor shall strictly adhere to the established dates set forth by the Schedule of Submittals specified above in paragraph 2.01 A.
3. Each submittal shall be made no later than 30 days prior to the time for incorporation of the item into the Work, or earlier under the following conditions:
  - a. As required to furnish and deliver to the site the specific item or items required, with sufficient time to allow proper examination and review of such submittals.
  - b. If the item in question is to be incorporated in the work prior to the expiration of 30 calendar days from the time of execution of the Contract, the aforesaid written notice shall be submitted to the Owner's Representative immediately following the execution of the Contract.
  - c. Substitutions: Each request for a substitution shall be made no later than 30 days prior to the time for incorporation of the item into the Work.
4. No item, material, article, system or piece of equipment requiring approval of the Owner's Representative shall be ordered or installed until such approval has been obtained.
5. Contractor shall provide the Owner's Project Manager and Clerk of the Works with software and training for programs used to schedule, and track Shop Drawings, Samples, and RFI's.

##### B. Product List for Color Selection: To facilitate the preparation of the color schedule, the Contractor shall submit, within thirty (30) calendar days following date of Award of Contract, unless otherwise extended by the Owner's Representative, a list of the names of the manufacturers whose products he proposes to use.

1. List products for which color, finish, pattern, texture, or other related information is a consideration.
2. Products listed shall be as specified, unless substitution has been approved.

##### C. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use facsimile of form provided at end of Section.
2. Documentation: Show compliance with requirements for substitutions listed on the Substitution Request form, and additional requirements as may be requested by the Owner's Representative or as otherwise applicable.

- D. Product Data, Shop Drawings, Samples, Schedules and other Submittals: Refer to individual Specification Sections for submittals required.
- E. Confirmation of contract between Contractor and printing company for reproduction of shop drawings as specified in this Section.

## **PART 2 - PRODUCTS**

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### 2.1 SUBMITTAL PREPARATION, GENERAL

- A. Preparation of Submittals: To receive consideration by the Owner's Representative, submittals shall be accompanied by a letter of transmittal. Each submittal shall contain the following information on the Drawing title block or a cover sheet stapled to the submittal:
  - 1. Project identification
  - 2. Owner's Representative's name
  - 3. Date of preparation of submission, and of revision if applicable
  - 4. Submittal number and title of item the Drawings refers to
  - 5. Owner's Representative's Drawing numbers and Specification paragraph number used as a reference in preparing submittal
  - 6. Contractor's and Subcontractor's names, & addresses and phone numbers
  - 7. Name of person or firm preparing Drawings
  - 8. Statement on stamp of approval by the Contractor, signifying that he has seen and examined the submittal and that requirements of the General Conditions have been complied with
- B. Each submittal cover sheet shall contain a clear space approximately 80 square inches for stamps and Owner's Representative's comments. Each drawing shall contain a similar space as an additional border on the right or bottom.
- C. Distribution:
  - 1. Contractor shall electronically deliver submittals to the Owner's Representative and its consultants in a format acceptable to the Owner's Representative.
  - 2. Simultaneously, Contractor shall deliver 1 hard copy print to the Owner's Representative and its consultants.
  - 3. Owner's Representative and consultants will review submittals, and the Owner's Representative will post reviewed submittals on FTP site and/or email to Contractor.
  - 4. Owner's Representative will hand deliver Owner Representative and Contractor hard copies at the weekly site meeting.
  - 5. Contractor is responsible for distribution to all trades.

### 2.2 PRODUCT DATA

- A. Manufacturers' Product Literature: For standard manufactured items, submit manufacturer's catalog sheets with illustrated cuts of the items to be furnished.
  - 1. Include scale details, sizes, dimensions, performance characteristics, capacities and other pertinent information.
  - 2. Each submittal of product data shall be accompanied by an appropriate transmittal form with specific reference to the applicable paragraph in the Specifications.

3. Indicate clearly on such printed matter which of several items is being submitted for approval.
- B. If catalog cuts of standard manufactured items show different types, options, finishes, performance requirements, or other variations, those features that the Contractor proposes to furnish shall be clearly circled or otherwise indicated, and all irrelevant diagrams, notes, or other information deleted or canceled.
1. If any variations from the catalog description are proposed or required, such variations shall be clearly noted on the cut by the Contractor.
  2. Wiring diagrams shall be produced to address specific project requirements. Catalog cuts of wiring diagrams will not be acceptable.

### 2.3 SHOP DRAWINGS

- A. The Contractor shall prepare shop drawings showing such features as required by the Technical Specifications Sections, to demonstrate an understanding of the particular conditions unique to this Project.
1. Prepare shop drawings at a scale of at least twice the scale of contract drawings showing the same work.
  2. Reproduction of Contract Documents in any form will not be accepted for use as Shop Drawings, unless specifically allowed in writing by the Owner's Representative for a particular portion of the Work.
  3. Refer to Section 011400 –WORK RESTRICTIONS for permissible use of electronic documents for the purpose of preparation of shop drawings. Use of Project Electronic Files for shop drawing preparation will be subject to the requirements specified in that Section.
- B. Shop Drawings related to various units comprising a proposed assembly shall be submitted simultaneously so that such units may be checked individually and as an assembly.
- C. Shop Drawing Distribution:
1. Shop Drawings shall be submitted through the Contractor directly to the applicable consultant and the Owner's Representative.
  2. Drawings submitted directly from Subcontractors, manufacturers or vendors, or directly to the Owner's Representative's consultants, will be returned to the Contractor without action.
  3. The Owner's Representative will forward copies of submittals to the Clerk of the Works when so requested for their use. However, it is the responsibility of only the Owner's Representative and their Consultants to review and respond to submittals.
- D. Each drawing and print shall have a clear space approximately 80 square inches as an additional border on the right or bottom for stamps and Owner's Representative's comments.
- E. Shop Drawings shall clearly indicate all details, sectional views, arrangements, working and erection dimensions, kinds and quality of materials and their finishes, and other information necessary for proper checking and for fabrication and installation of the items, and shall include all information required for making connections to other work and/or adjacent materials.

- F. If any information on previously submitted Shop Drawings, aside from notations made by the Owner's Representative is revised in any way, such revision shall be circled or otherwise graphically brought to the Owner's Representative's attention. If approved Drawings are subsequently revised, they shall be resubmitted to the Owner's Representative with all revisions clearly marked for the Owner's Representative's attention. Whenever drawings are revised, the latest revisions shall be circled or otherwise indicated to distinguish them clearly from all previous revisions (and from the information on the original drawing).

#### 2.4 SAMPLES

- A. Submit samples as required under the various Sections of the Specifications. Each sample shall be accompanied by a transmittal and cover sheet as required for all submittals.
- B. Before submitting samples, consult with Owner's Representative to determine whether samples are to be submitted to Owner's Representative's office, field, or other location.
- C. Samples shall be submitted in triplicate, unless otherwise specified or directed by the Owner's Representative.
- D. Samples may be submitted to Owner's Representative directly from manufacturers, vendors, suppliers, Subcontractors, or others, but a separate transmittal letter shall be submitted through the Contractor in each such case.
- E. Approved samples of major or expensive items or assemblies, if in good condition and meeting all requirements of the Contract, may be properly marked for identification and used in the Work, provided that all shipping and handling charges are paid by the Contractor.
- F. Each sample shall have a label indicating the material represented, its place of origin, and the names of the producer, the Owner's Representative, the Contractor, the Subcontractor and the building or Work for which the material is intended. Samples shall be marked to indicate the Drawing numbers or Specification Paragraph requiring the materials represented.
- G. Approval of samples for color, texture, and other aesthetic qualities shall not be construed as approval of other characteristics.
- H. Approved samples, unless specifically stated by the Contractor as slated for incorporation in the Work, will be kept on file (and accessible for inspection) by the Owner's Representative until Final Acceptance of the Project. Any sample not reclaimed by the Contractor within thirty (30) days after Substantial Completion of the Project will be considered unclaimed material, and may be disposed of by the Owner's Representative.

#### 2.5 COLORS AND FINISHES

- A. The Owner's Representative will prepare a master color schedule indicating the required color, finish, pattern, material, texture, and other pertinent information in connection with interior and exterior finishes.
- B. Color chips shall be submitted for all items having color unless otherwise directed or approved by the Owner's Representative. Upon the expiration of such 45-day period, the Owner's Representative will proceed with color selection and preparation of final color schedule.

- C. The Owner's Representative will select the colors and finishes of a manufacturer within the framework of the Specifications, for each item where the Contractor fails to submit the name of a specific manufacturer within the allotted time, and the Contractor shall provide such materials without additional compensation.

## 2.6 CALCULATIONS

- A. Calculations Based on Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, submit calculations demonstrating that products and systems comply with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Owner's Representative.
- B. Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents.
  - 2. Include list of codes, loads, and other factors used in performing these services

## 2.7 INFORMATIONAL SUBMITTALS

- A. General: Informational submittals comprise written information that does not require Owner's Representative's responsive action. Submit to the Owner's Representative two copies, or more if specified, for each informational submittal. The Owner's Representative will distribute copies to the Owner for their records.
- B. Informational submittals required for the Work include, but are not limited to, the following:
  - 1. Storm Water Pollution Prevention Plan Documentation, as specified in Section 011400 –WORK RESTRICTIONS
  - 2. Calculations for Contractor-engineered work, as specified in particular specification sections in Divisions 2 through 50.
  - 3. Research/evaluation reports and test data as specified in particular specification sections in Divisions 2 through 50.
  - 4. Certifications and other qualification data, as specified in particular specification sections in Divisions 2 through 50.
  - 5. Maintenance data, as specified in particular specification sections in Divisions 2 through 50.
  - 6. Confirmation of contract with printing company as specified in this Section.

### **PART 3 - EXECUTION**

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#### **3.1 CONTRACTOR ACTION ON SUBMITTALS**

- A. Should the Owner's Representative in checking shop drawings or other submittals make changes which the Contractor deems will increase the Contract Price, the Contractor shall so inform the Owner's Representative in writing within fourteen (14) days following receipt of the checked submittals and prior to starting fabrication of the item or items. Failing this, the Contractor shall be deemed to have waived all claims for extra compensation for the work involved.
- B. Notes or other information on submittals that are contrary to provisions of the Contract Documents shall be deemed to be addressed to the applicable Contractor, Subcontractor, material supplier or other parties involved, and shall have no force or effect with respect to this Contract, even though the Shop Drawing or Sample involved is approved by the Owner's Representative. In particular the terms "By Others", "N.I.C." or words of similar meaning and import on submissions shall not be deemed to imply that the referenced items are to be omitted from this Contract.
- C. The Contractor shall obtain and distribute copies of approved Shop Drawings and other Submittals to his subcontractors and material suppliers needing such information, at no additional cost to the Owner.
- D. The Contractor shall keep on the site, in good order, a complete up-to-date set of all approved Shop Drawings and other Submittals.
- E. Contractor shall assume full liability for delay attributed to insufficient time for delivery and/or installation of material or performance of the Work when approval of pertinent Shop Drawings is withheld due to failure of the Contractor to submit, revise, or resubmit Shop Drawings in adequate time to allow the Owner's Representative reasonable time, not to exceed twenty-one (21) working days (excluding weekends & holidays), for normal checking and processing of each submission and resubmission. The Owner's Representative will not be limited to twenty-one (21) days when the Shop Drawing Schedule has not been submitted or is not current.

#### **3.2 OWNER'S REPRESENTATIVE ACTION ON SUBMITTALS**

- A. Product Data and Shop Drawings: After reviewing product data submittals, the Owner's Representative will mark each submittal with one of the following responses
  - 1. The Owner's Representative will annotate the transparency or an original copy and apply a stamp including the following information: "Reviewed as required by the Construction Contract Documents and approved, but only for conformance to the design concept of the Work, and subject to further limitations and requirements contained in the Contract Documents."
  - 2. "Rejected". Two copies of each rejected submittal will be returned to the Contractor. Rejected copies shall be resubmitted in the same manner until approval is obtained.
  - 3. The stamp will also contain notes indicating possible actions, namely; "rejected"; "revise and resubmit"; and "furnish as corrected". Owner's Representative will check one of the actions.

4. Corrections or comments made on the submittals during this review shall not relieve Contractor from compliance with requirements of the Contract Drawings and Specifications. This check is only for review of general conformance with the design concept of and general conformance with the information given in the Contract Documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.
  5. For Submittals marked "Rejected", or "Revise and Resubmit", the Owner's Representative will have prints made from the marked reproducible Drawings at the Contractor's expense. Such prints shall be used for record purposes and for comparison with subsequent resubmissions. One will be retained by the Owner's Representative, one furnished to the applicable consultants, if any, and the transparency returned to the Contractor. Such procedures shall be followed until the Shop Drawing is marked "Furnish as Corrected", or "Reviewed as required by the Construction Contract Documents and approved, but only for conformance to the design concept of the work, and subject to further limitations and requirements contained in the Contract Documents."
  6. Submittals marked "Furnish as Corrected" shall be treated in the same manner as Drawings marked "Reviewed as required by the Construction Contract Documents...and requirements contained in the Contract Documents." The Owner's Representative's comments shall be considered part of the original Drawings. Should the Contractor disagree with such comments, he shall so notify the Owner's Representative in writing within fourteen (14) days after receipt of such Drawings and before commencing work on the items in question. Failing this, the Contractor shall be deemed to have accepted full responsibility for implementing such comments at no additional cost to the Owner.
  7. Transparencies for all Drawings marked "Furnished as Corrected" or "Reviewed as required by the Construction Contract Documents..." will be returned to the Contractor.
  8. Before the transparency is returned by the Owner's Representative with the stamp "Reviewed as required by the Construction Contract Documents..." or "Furnish as Corrected", the Owner's Representative will have made at the Contractor's expense, four (4) prints of the corrected original for the Owner's Representative's and Owner's use.
- B. Informational Submittals: Owner's Representative will review each informational submittal and will review it for general compliance with submittal requirements
1. Owner's Representative will process and distribute each informational submittal as for other submittals.
  2. Compliant informational submittals will be marked "Reviewed" and stamped copies will be distributed to Owner's Project Manager, Clerk of the Works and Contractor.
  3. Informational submittals that do not comply with submittal requirements specified herein and in the section whose work they cover will be returned without any action or stamp. Re-submittal will be required.

- C. Repeated Re-submittals: The Owner's Representative will review the initial submittal for each product, and one re-submittal if revisions are required.
  - 1. If the first re-submittal is rejected or requires further revision, the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to perform review of an extensive number of repeated submittals, until a submittal for that product is accepted by the Owner's Representative with no need for further revision.
  - 2. Refer to Section 011400 –WORK RESTRICTIONS, for procedures required in cases where Contractor is responsible to the Owner for costs for Additional Services of the Owner's Representative.

### 3.3 SUBSTITUTIONS

- A. Definition: Substitutions are changes proposed by Contractor for products, materials, equipment, and methods of construction differing from those required by the Contract Documents.
- B. Conditions: Owner's Representative will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner's Representative will return requests without action, except to record noncompliance with these requirements:
  - 1. Substitution is requested by completing a copy of Form 013301 – SUBSTITUTION REQUEST FORM, attached to the end of this Section.
  - 2. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Owner's Representative for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  - 3. Requested substitution does not require extensive revisions to the Contract Documents.
  - 4. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - 5. Substitution request is fully documented and properly submitted.
  - 6. Requested substitution will not adversely affect Contractor's Construction Schedule.
  - 7. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - 8. Requested substitution is compatible with other portions of the Work.
  - 9. Requested substitution has been coordinated with other portions of the Work.
  - 10. Requested substitution provides specified warranty.
  - 11. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- C. Owner's Representative's Action: If necessary, Owner's Representative will request additional information or documentation for evaluation within 7 working days of receipt of a request for substitution. Owner's Representative will notify Contractor of acceptance or rejection of proposed substitution within 15 working days of receipt of request, or 7 working days of receipt of additional information or documentation, whichever is later.

1. Use product specified if Owner's Representative cannot make a decision on use of a proposed substitution within time allocated.
- D. Review of Substitution Requests: The Owner's Representative will review Substitution Requests that are submitted in accordance with the requirements of this section, and are shown to be of benefit to the Project.
1. If a request for substitution is incomplete, the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to perform additional review, until the substitution has been either accepted with no need for further revision, or rejected.
  2. If a request for substitution is shown to be of benefit to the Contractor only and not to the Project, the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to perform review, redesign or coordination due to such substitution.
  3. Refer to Section 011400 –WORK RESTRICTIONS, for procedures required in cases where Contractor is responsible to the Owner for costs for Additional Services of the Owner's Representative.
- E. Form of Acceptance of Substitution: Change Order

**END OF SECTION**

Attachment: Form 013301 – SUBSTITUTION REQUEST FORM

**FORM 013301**  
**SUBSTITUTION REQUEST FORM**

Project: Lighting and Security Cameras at Hancock Cemetery Walk, Quincy, MA

To: Halvorson Design Partnership, Inc.

We hereby submit for your consideration the following product as a substitution for the item specified for the above referenced project:

Drawing Number: \_\_\_\_\_ Drawing Title: \_\_\_\_\_

Specification Section: \_\_\_\_\_ Section Title: \_\_\_\_\_

Paragraph: \_\_\_\_\_ Specified Item: \_\_\_\_\_

Proposed Substitution: \_\_\_\_\_

SCHEDULE 0 - Attach complete information on changes to Drawings and Specifications, including related work on other Drawings and under other Sections of the Specifications necessary for the proper installation of the proposed substitution, including proper coordination and finishing.

SCHEDULE 1 - Submit with request complete Product Data, samples and other data necessary to substantiate that the proposed item is equal to or exceeds the specified item in all respects. Include a comparison chart showing material features and properties of the specified item and the proposed substitute, paying particular attention to requirements specifically mentioned in the Specifications or shown on the Drawings, and guarantee/warranty information. Clearly mark manufacturer's literature to indicate equality in performance. In the case of operating equipment or systems, provide information as to servicing and maintenance requirements, and anticipated service life in the indicated application.

Fill in the blanks below (attach additional sheets as necessary):

A. Does the substitute affect dimensions shown on the Drawings: Yes  No   
(if yes, clearly indicate changes on enclosures)

B. Will the undersigned pay for changes to the building design, including architectural/engineering detailing costs caused by the requested substitution: Yes  No   
(if no, please explain)

C. What effect does the substitution have on other Contracts or other trades? \_\_\_\_\_

D. What effect does the substitution have on construction schedule? \_\_\_\_\_

E. Manufacturer's warranties of the specified and proposed items are: Same  Different

Explain: \_\_\_\_\_

F. Itemized comparison of specified item with proposed substitute is attached.

G. This substitution will amount to a credit or extra cost to the Owner of:

\_\_\_\_\_ Dollars

(\$\_\_\_\_\_).

Notes:

Submission of this form by the Contractor will not require the Owner to accept the proposed substitution unless the substituted product or system meets the requirements of Massachusetts General Law, Chapter 30, Section 39M and is acceptable to the Architect.

The Owner's acceptance of any substitution will not change the Contract Price, unless the Owner, Contractor and any other required parties execute a Change Order in accordance with the terms and provisions of the Contract Documents.

Refer to Section 013300 – SUBMITTAL PROCEDURES, for additional requirements for the submittal and processing of substitution requests.

Submitted By: \_\_\_\_\_  
(signature)

Title: \_\_\_\_\_

Firm: \_\_\_\_\_

**END OF FORM**

**SECTION 014000  
QUALITY REQUIREMENTS**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. This Section includes administrative and procedural requirements for
1. Quality assurance
  2. Quality control
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  3. Requirements for Contractor to provide quality-assurance and -control services required by Owner's Representative, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Owner's Representative.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Owner's Representative for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Owner's Representative for a decision before proceeding.

## 1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Testing and Inspection Log: Submit updated copy of log each month with the Application for Payment.
- C. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

## 1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
  - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Owner's Representative, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
3. Build mockups in location and of size indicated or, if not indicated, as directed by Owner's Representative.
  4. Coordinate the work of multiple subcontractors as needed to build complete mockups of multi-component systems.
  5. Notify Owner's Representative seven days in advance of dates and times when mockups will be constructed.
  6. Demonstrate the proposed range of aesthetic effects and workmanship.
  7. Obtain Owner's Representative's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  8. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  9. Demolish and remove mockups when directed, unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 50.

#### 1.7 QUALITY CONTROL – OWNER RESPONSIBILITIES

- A. General: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Testing, inspections and commissioning performed by the Owner or the Owner's agents in no way reduce the responsibility of the Contractor to meet performance requirements, descriptive criteria and all other requirements of the specifications, nor do these activities on the part of the Owner relieve the Contractor from performing Quality Assurance and Quality Control measures specified.
- B. Tests and Inspections: The Owner reserves the right to employ consultants and testing agencies to test the performance of the Work and to inspect the Work for conformance with the Contract Documents.
1. Notice for Testing: The Contractor shall give the Owner a minimum 24-hour notice when installations that require testing are ready for testing or inspection.
    - a. Earlier notice shall be given where specified in a given technical section of the Specifications.
    - b. If the Owner's testing agency arrives at the site to test the performance of the work, and determines that the installation is not ready for testing or inspections, then the Contractor shall be responsible for the costs of the testing agency's site visit
  2. Availability of Test Results: The results of such tests and inspections will be made available to the Owner's Representative and Contractor.
  3. Correction of Work:
    - a. Where results demonstrate deficiencies in the Work, the Contractor shall take all actions necessary to correct the Work in a timely manner at their own expense.
    - b. When the Contractor considers the Work to be corrected, further tests and in-

spections will be performed by the Owner's consultants and testing agencies at the Contractor's expense.

- C. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
- D. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

## 1.8 QUALITY CONTROL – CONTRACTOR RESPONSIBILITIES

- A. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Owner's Representative and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Owner's Representative and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting. Schedule times for tests, inspections, obtaining samples, and similar activities.
- G. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
1. Distribution: Distribute schedule to Owner, Owner's Representative, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

## **PART 2 - PRODUCTS (NOT USED)**

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## **PART 3 - EXECUTION**

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### **3.1 TEST AND INSPECTION LOG**

- A. Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Owner's Representative.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Owner's Representative's reference during normal working

hours.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  - 2. Comply with the Contract Document requirements for Section 017329 – CUTTING AND PATCHING.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION**

**SECTION 015000  
TEMPORARY FACILITIES AND CONTROLS**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following:
1. Temporary facilities and services.
  2. Temporary water.
  3. Temporary sanitary facilities
  4. Protection of work, property and the public
  5. Security of the work
  6. Rodent control.
  7. Water control
  8. Construction fence
  9. Project signs

1.3 SUBMITTALS

- A. General: Refer to Section 013300 – SUBMITTAL PROCEDURES, for submittal provisions and procedures.

1.4 TEMPORARY FACILITIES AND SERVICES

- A. Contractor shall be responsible for arranging and providing temporary facilities and general services at the site as specified herein and as otherwise required for proper and expeditious prosecution of work. Except as otherwise specified, the Contractor shall pay costs for temporary facilities and general services until Final Acceptance of the Work and shall remove same at completion of the Work.
- B. Services and facilities shall comply with applicable Federal, State and local regulations.
- C. Contractor shall make connections to existing services and sources of supply, shall provide all necessary installations, labor, materials, and equipment, in a manner subject to the approval of the Owner's Representative and the Owner, shall remove temporary installations and conditions when no longer required, and shall restore the services and sources of supply to proper operating condition as approved by the Owner's Representative.
- D. Discontinuance of temporary service prior to the completion of any portions of the Work shall not render the Owner liable for additional cost resulting therefrom.
- E. Should a change in location of temporary facilities and equipment be necessary in order for the Work to progress properly, Contractor shall remove and relocate such equipment as re-

quired without additional cost to the Owner.

1.5 TEMPORARY WATER

- A. Furnish potable water for construction purposes. Make arrangements and pay charges for water service installation, maintenance, and removal thereof, and pay costs of water for trades.
- B. Temporary pipe lines and connections from the permanent service line for the use of the Contractor and his Subcontractors shall be installed, protected and maintained at the expense of the Contractor.
- C. In addition to temporary lines and connections, the Contractor, if required by the Owner, shall at the Contractor's expense install a temporary meter in a frostproof box in such location and in such manner as may be approved by the Owner's Representative.
- D. Provide an adequate supply of drinking water from approved sources of acceptable quality, satisfactorily cooled, for Contractor's employees and those of his Subcontractors. Where required, furnish drinking water in suitable containers and provide single-service cups for use of employees. Drinking water dispensers shall be conveniently located in building where work is in progress.
- E. At completion of construction work, temporary water service equipment and piping shall be removed by Contractor.

1.6 TEMPORARY ELECTRICITY, LIGHTING AND TELEPHONE

- A. Temporary Electricity, Lighting and Telephone will not be required on site.

1.7 TEMPORARY SANITARY FACILITIES

- A. Contractor shall provide an adequate number of toilet facilities with chemical type toilets and temporary lighting rented from and serviced by an approved company for persons engaged on the Work. Provide separate facilities for male and female workers.
- B. Toilets shall be erected in location approved by the Owner's Representative, shall be maintained by the Contractor in a clean and orderly condition in compliance with local and State health requirements, and shall be removed at Substantial Completion of the Work.
- C. Permanent toilet facilities shall not be used by the Contractor, Subcontractors or persons engaged by them during the course of work under this Contract.

1.8 TEMPORARY FIRE PROTECTION

- A. Provide and maintain adequate temporary fire protection in the form of barrels of water with buckets, fire bucket tanks, fire extinguishers, or other effective means of extinguishing fire, ready for instant use, distributed around the Project and in and about temporary inflammable structures during construction of the Work.
- B. Within 30 calendar days after award of Contract, the Contractor shall submit in writing to the Owner's Representative, three (3) copies of his proposed methods for fire protection that have been reviewed and approved by the local Fire Department. Post a copy of the approved fire protection plan in the Field Office for reference.

- C. Gasoline and other flammable liquids shall be stored in and dispensed from UL listed safety containers in conformance with National Board of Fire Underwriter's recommendations. Storage shall not be within building.
- D. Make arrangements for periodic inspection by local fire protection authorities and insurance underwriter's inspectors. Cooperate with said authorities and promptly carry out their recommendations.
- E. Tarpaulins used during construction work shall be made of material that is resistant to fire, water, and weather. Tarpaulins shall have UL approval and comply with FS-CCC-D-746.
- F. Torch-cutting and welding operations performed by Subcontractors shall have approval of Contractor before such work is started and chemical extinguisher shall be available within sight and not over ten (10) feet from location where such work is in progress.
- G. Do not light fires in or about premises.

1.9 PROTECTION OF WORK, PROPERTY AND THE PUBLIC

- A. Furnish, erect, and maintain, until such time as removal is approved by the Owner's Representative, temporary fencing and barricades to extent recommended by OSHA and as otherwise required for the protection of life and property during operations under the Contract.
- B. Construct barricades and protective facilities in accordance with local and State regulations. Furnish and install all signs, lights, reflectors, and all such protection facilities as may be required.
- C. Contractor shall save the Owner harmless from claims arising from the use of public streets, sidewalks, and adjoining premises for construction purposes.
- D. Keep access roads and walks clear of debris, materials, construction plant and equipment during building operation. Repair streets, drives, curbs, sidewalks, fences, poles and the like where disturbed in building operation and leave them in as good condition after completion of the Work as before operations started.
- E. Protect planting, landscaping, trees and site improvements to remain.
- F. The Contractor shall be responsible for the maintenance of construction barriers and traffic barriers in order to maintain traffic around the Work with the maximum of safety and practical convenience to such traffic during the life of the Contract, and whether or not work has been suspended temporarily. He shall take all precautions for preventing injuries to persons or damage to property on or about the Work.
- G. Work shall be carried on and barriers erected in such a manner as to provide safe passage at all times for public travel and with least obstruction to traffic. The Contractor shall provide and maintain at his own expense in a safe and passable condition such temporary bypasses created by the barriers as may be necessary to accommodate both pedestrian and vehicular traffic.
- H. Whenever gale or high winds are forecast, take proper measurements to secure all loose material, equipment or other items that could blow about and be damaged or cause damage to other work. No such loose items shall be left unsecured at end of working day. Particular attention shall be taken with scaffolding and items placed or stored on roofs or within

the structure prior to being enclosed.

#### 1.10 SECURITY OF THE WORK

- A. The Contractor shall be responsible for providing security precautions necessary to insure adequate protection of his and the Owner's interests.
- B. Take measures to protect the Work against fire, storm, theft, vandalism and other losses.
- C. The Contractor shall be wholly responsible for patrolling and protecting the work under construction and the materials stored on the site; and shall reimburse the Owner for losses, damage or injury not compensated by insurance, except those directly caused by the Owner, his agents or his employees.
- D. The Contractor shall rebuild, repair, restore and make good damage to the Work occasioned by the above causes before completion and written acceptance of the completed Work, and shall bear the expense thereof. No extension of time will be allowed in such cases.
- E. Should the Contractor fail to take prompt action whenever conditions make it necessary, the Owner may make emergency repairs or cause the same to be made, with the stipulation that the costs for such repairs shall be charged against the Contractor and deducted from monies due to him.

#### 1.11 RODENT CONTROL

- A. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents and to perform extermination and control procedures at regular intervals so Project will be free of rodents and their residues at Substantial Completion.
  - 1. Obtain extended warranty for Owner.
  - 2. Perform control operations lawfully, using environmentally safe materials.
  - 3. The Contractor's attention is brought to the fact that the building will be occupied by children. Every effort shall be made to avoid applications of materials that will in any way compromise their health.

#### 1.12 WATER CONTROL

- A. Take over responsibility for site drainage in work areas upon entering the premises and maintain such drainage during the life of this Contract in a manner approved by the Owner's Representative and so as not to adversely affect adjacent areas or abutting property.
- B. During the progress of the Work, provide and maintain all required pumps, suction and discharge lines, and power in sufficient number and capacity to keep all excavations, pits, trenches, foundations, and the entire property area free from accumulation of water from any source whatsoever, at all times, and under any and all circumstances and contingencies that may arise.

## **PART 2 - PRODUCTS**

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### 2.1 CONSTRUCTION FENCE

- A. Furnish, install, maintain, and pay for temporary fencing and other protection required for the safety of the Work and of stored materials and equipment. Provide temporary construction fence as required for public safety and protection around entire construction area at the Limit of Work line, at each site as shown on Drawings.
- B. Construction fence shall be eight (8) feet high and of chain link construction with 6 gauge wire at the top and the bottom of the fencing material, erected in a substantial manner, straight, plumb and true.
- C. Gates shall be built into fence at such approved locations as are necessary, well cross-braced and hung on heavy strap hinges with proper post and hook for double gates. Provide heavy hasps and padlocks for each gate. Provide keys to Owner to facilitate emergency access by Owner's Security Forces and local Police and Fire Department.
- D. Fencing shall be in accordance with local ordinances and shall be removed at such time before Final Acceptance as the Owner's Representative directs. Restore site to acceptable condition after removing fence.
- E. Vehicular access to the site, and parking for Contractor's employees' vehicles shall be restricted to the specific areas designated by the Owner.

### 2.2 PROJECT SIGNS

- A. Provide in a location designated by the Owner's Representative one (1) sign, 4 feet by 8 feet in size, with three 4-inch by 4-inch post supports. Sign shall be fabricated from 3/4 inch thick medium density overlaid exterior plywood, edged continuously with 3/4 inch square pine banding. Apply one coat of exterior primer and two coats of exterior gloss enamel to all surfaces of sign and supports.
- B. Sign shall be professionally produced and shall indicate: (1) the name of the Project, (2) the name of the Owner, (3) the name of the Contractor, (4) names and addresses of the Owner's Representative. Graphic images and lettering, including type size, style and colors, will be provided by the Owner's Representative prior to beginning of construction. Owner's Representative will provide layout in electronic disc format or printed copy for sign production.
- C. Provide directional signs as required to properly control construction traffic at each site.
- D. No other signs or advertisements will be allowed on building or premises.

### 2.3 TEMPORARY OFFICES

- A. A temporary office or equipment will be not be required on site.

## **PART 3 - EXECUTION (NOT USED)]**

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**END OF SECTION**

**SECTION 017329  
CUTTING AND PATCHING**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. This Section covers procedural requirements for cutting and patching, including but not limited to the following:
1. Standard requirements for all cutting and patching to be done on the Project, whether by the General Contractor, Filed Sub-Contractors or other subcontractors.
- B. Refer to the following Sections for related work:
1. Section 015000 – TEMPORARY FACILITIES AND CONTROLS, for temporary protection, shoring and construction aids.
  2. Section 017400 – CONSTRUCTION WASTE MANAGEMENT, for disposal of demolished materials.
  3. Division 2 through Division 14 Sections, for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
  4. Section 033000 – CAST-IN-PLACE CONCRETE, for cutting, patching and repair of concrete.
  5. Section 260000 – ELECTRICAL, for items to be installed by electrical trades, except as otherwise indicated.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.
- C. Coring: Any new penetration cut through existing or new construction using core drill and measuring no more than 6 inches in diameter, or 6 inches by 6 inches. Larger cores are considered under cutting.

#### 1.4 RESPONSIBILITY FOR CUTTING AND PATCHING

- A. General: All cutting and patching shall conform to the requirements of this Section, whether or not the work is to be done by the Contractor, a Filed Subcontractor or other Subcontractor.
  - 1. Patching shall be performed so as to maintain the integrity of acoustical rating of adjacent construction.
- B. Coring: All coring shall be performed by the trade requiring the new penetration.

#### 1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio. Structural elements include but are not limited to the following:
  - 1. Reinforced concrete columns and beams. Coring of concrete foundation walls and slabs will be permitted where shown on drawings or required for mechanical and electrical work.
  - 2. Reinforced masonry bearing walls.
  - 3. Steel columns, beams, joists and connections.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Owner's Representative's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

#### 1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

### **PART 2 - PRODUCTS**

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#### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.

- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

### **PART 3 - EXECUTION**

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#### **3.1 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

#### **3.2 PREPARATION**

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations. Refer to Section 015000 – Temporary Facilities and Controls for additional requirements.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

#### **3.3 PERFORMANCE**

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces, in such a manner as to ensure a minimal difference between the cut area and new materials when patched..

3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Use extreme care when cutting through construction containing concealed mechanical and electrical lines. Coordinate cutting and patching work with the following work to be performed under Section 260000.
  6. Hazardous Materials: If unanticipated hazardous materials which would be disturbed by cutting and patching are discovered at any time during the course of work, cease work in the affected area only and continue work in other areas, and notify Owner's Representative and the Owner of such discovery. Do not proceed with work in such affected areas until written instructions are received.
  7. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
  3. Restore damaged pipe covering to its original condition.
  4. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  5. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  6. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
- 3.4 DEBRIS REMOVAL AND CLEANING
- A. Dispose of all materials under Section 017400 – CONSTRUCTION WASTE MANAGEMENT.
  - B. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

**END OF SECTION**

**SECTION 017700  
CLOSEOUT PROCEDURES**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:

1. Final cleaning
2. Warranties
3. Closeout requirements
4. Inspection and Submittals for Substantial Completion
5. Monetized Punch List Inspections
6. Final Inspection and Submittals
7. Final application and certificate for payment
8. Post-construction inspection

- B. Related Work includes, but is not limited to, the following Work under other Sections:

1. Dates for Final Completion: Section 001118 – FORM FOR GENERAL BID.
2. Procedures related to Owner's Representative's additional services if required to complete closeout of Project: Section 011400 – WORK RESTRICTIONS
3. Construction schedule requirements: Section 013200 – CONSTRUCTION PROGRESS DOCUMENTATION.
4. Temporary facilities to be removed at the end of the Project: Section 015000 – TEMPORARY FACILITIES AND CONTROLS.
5. Documents to be submitted as part of Closeout Requirements: Section 017839 – PROJECT RECORD DOCUMENTS

1.3 SUBMITTALS

- A. Warranties: As specified herein.
- B. Punch Lists: As specified herein.
- C. Submittals for Substantial Completion: As specified herein.
- D. Final Submittals: As specified herein.

## **PART 2 - PRODUCTS**

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### 2.1 CLEANING MATERIALS

- A. Refer to Section 011400 WORK RESTRICTIONS for cleaning materials.

## **PART 3 - EXECUTION**

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### 3.1 FINAL CLEANING

- A. Before final inspection, thoroughly clean the entire areas where construction work has been performed.
- B. Refer to Section 011400 WORK RESTRICTIONS for general requirements for cleaning and for cleaning products, and refer to individual specification sections for cleaning requirements for particular products.
- C. Employ experienced workmen or professional cleaners for final cleaning operations.
- D. Remove construction facilities, debris, and rubbish from the Owner's property and legally dispose of same beyond site limits.
- E. Broom clean exterior paved surfaces, and rake clean other surfaces of the grounds.
- F. Sweep, dust, wash, and polish finished surfaces. This includes cleaning of the Work of finished trades where needed, whether or not cleaning for such trades is included in their respective Sections.
- G. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from surfaces.
- H. Repair, patch and touchup marred surfaces to specified finish, to match adjacent surfaces.
- I. Prior to final completion, Contractor shall conduct an inspection of work areas, to verify that the entire Work is clean.
- J. Owner will assume responsibility for cleaning as of time designated on Certificate of Substantial Completion for Owner's acceptance of Work or portion thereof.

### 3.2 WARRANTIES

- A. Compile specified warranties, review to verify compliance with Contract Documents, and submit to Owner's Representative for review and subsequent transmittal, if approved, to the Owner.
- B. Assemble two original signed copies of warranties, of each of the respective manufacturers, suppliers and subcontractors.
- C. Neatly type Table of Contents in orderly sequence. Provide complete information for each

item:

1. Product or work item identification.
  2. Manufacturing or supplying firm, with name of principal, address and telephone number.
  3. Scope of work and of warranty provided.
  4. Date of beginning of warranty. Commence upon date of Substantial Completion.
  5. Duration of warranty. (In no case less than one (1) year).
  6. Information for Owner's personnel:
    - a. Proper procedure in case of failure.
    - b. Instances which might affect validity of warranty.
  7. Contractor, name of responsible principal, address and telephone number.
- D. Form of Submittals: Prepare in duplicate packets and in the following format:
1. Size: 8-1/2" x 11". Punch sheets for 3-ring binder. Z-Fold larger sheets to fit into binders.
  2. Cover: Identify each packet with types or printed title "WARRANTIES ". List Title of Project, Date and Name of Contractor.
  3. Binders: Commercial quality, three-"D"-ring, with durable and cleanable plastic covers.
- E. Time of Submittals:
1. For equipment or component parts of equipment put into service during progress of construction, submit documents within ten (10) days after inspection and acceptance. Otherwise, make submittals before Date of Substantial Completion.
  2. For items of Work where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing the date of acceptance as the start of the warranty period.
- F. Submittals Required: Submit warranties as specified in the respective Sections of the Specifications.

### 3.3 CLOSEOUT REQUIREMENTS

- A. Punch List: When the Contractor submits a complete list of items to be completed or corrected in accordance with subparagraph 9.8.2 of the GENERAL CONDITIONS and the Owner's Representative receives the list, the Owner's Representative will make an inspection to determine whether the Work or designated portion is substantially complete. The Contractor shall submit a schedule indicating when each item will be completed.
- B. If the Owner's Representative determines that the Contractor's list is not complete, the Owner's Representative will notify the Contractor. The Contractor shall provide a complete list before the Owner's Representative will complete his inspection.
- C. If the Owner's Representative's inspection discloses any item whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Owner's Representative will add the item to the list and will issue a punch list of items to be completed or corrected before final payment will be made. Such punch list shall not be construed as all-inclusive of the work which the Contractor will be required to perform before final payment.

- D. Substantial Completion: Owner's Representative will prepare and issue a Certificate of Substantial Completion, AIA G704, complete with signatures of Owner and Contractor, accompanied by list of items to be completed or corrected, as verified and amended by the Owner's Representative. Owner's Representative will not issue certificates of Substantial Completion until the items listed below in Articles 3.05 and 3.06 have been completed and submitted.

#### 3.4 INSPECTION FOR SUBSTANTIAL COMPLETION

- A. In preparation for Substantial Completion, the Contractor shall submit written certification that:
  - 1. Contract Documents have been reviewed.
  - 2. Work has been inspected for compliance with Contract Documents.
  - 3. Work has been completed in accordance with Contract Documents.
  - 4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
  - 5. Work is completed, and ready for inspection.
- B. Owner's Representative will begin inspection within seven (7) days after receipt of above referenced Contractor's Certification.
- C. Should the Owner's Representative consider the Work is substantially complete in accordance with requirements of Contract Documents, the Owner's Representative will request Contractor to make Project Closeout submittals.
- D. Should the Owner's Representative consider that the Work is not substantially complete:
  - 1. The Owner's Representative will notify Contractor, in writing, stating reasons.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to the Owner's Representative certifying that the Work is complete.

#### 3.5 SUBMITTALS FOR SUBSTANTIAL COMPLETION

- A. Contractor shall submit the following items at Substantial Completion:
  - 1. Operating and Maintenance Data.
  - 2. Schedule for training and instruction on new electrical systems.
  - 3. Guarantees and Warranties.
  - 4. Keys and keying schedule.
  - 5. Spare Parts and Maintenance Materials.
  - 6. Evidence of Compliance with requirements of governing authorities.
  - 7. Punch list with schedule.
  - 8. Final Record Documents
- B. Evidence of compliance with authorities' requirements shall include:
  - 1. Certificates of Inspection:
    - a. Electrical

- C. Submit Certificate of Insurance for products and completed operations.
- D. Instructions: Instruct Owner's personnel in the operation of all systems, electrical and other equipment.

### 3.6 MONETIZED PUNCHLIST INSPECTIONS

- A. Within 30 days of Substantial Completion, the Owner's Representative will produce a Monetized Punch List that assigns a monetary value to each item remaining incomplete or incorrect.
- B. The Contractor may request two inspections by the Owner's Representative after receipt of the Monetized Punch List, for the purpose of documenting progress toward completion of items on the List.
  - 1. If the Owner's Representative is required to inspect the Work more than twice prior to establishment of Final Completion, the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to perform additional inspections, until the Work is considered Finally Complete.
  - 2. Refer to Section 011400 WORK RESTRICTIONS, for procedures required in cases where Contractor is responsible for costs for Additional Services of the Owner's Representative.

### 3.7 FINAL INSPECTION

- A. The Contractor shall complete or correct remaining items on the Monetized Punch List in accordance with the time limits stated in the General Conditions.
- B. Certification of Final Completion: When the Contractor considers that the items on the Monetized Punch List have been completed or corrected, Contractor shall submit written certification that the items on the Monetized Punch List have been completed and corrected. This certification shall include a copy of the Monetized Punch List with the following information added:
  - 1. Indicate beside each item the date when the item was completed or corrected and,
  - 2. In the case of items completed by subcontractors or sub-subcontractors, the name of the Subcontractor or Sub-subcontractor.
- C. The Owner's Representative will begin inspection within seven (7) days after receipt of such certification, to determine whether items on the Punch List have been completed.
  - 1. Should the Owner's Representative determine that the Work is not complete after receipt of the certification of Final Completion; the Contractor shall be responsible to the Owner for costs for Additional Services of the Owner's Representative to perform additional inspections, until all items on the Punch List are completed.
  - 2. Refer to Section 011400 WORK RESTRICTIONS, for procedures required in cases where Contractor is responsible for costs for Additional Services of the Owner's Representative.

3.8 FINAL SUBMITTALS

- A. Contractor's Affidavit of Payment of Debts and Claims, AIA G706.
- B. Contractor's Affidavit of Release of Liens, AIA G706A, with:
  - 1. Consent of Surety to Final Payment: AIA G707.
  - 2. Contractor's release or waiver of liens.
  - 3. Separate releases or waivers of liens for subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.
- C. Submittals shall be duly executed before delivery to the Owner's Representative.

3.9 FINAL APPLICATION AND CERTIFICATE FOR PAYMENT

- A. Contractor shall submit final application for payment in accordance with requirements of the GENERAL CONDITIONS.
- B. Owner's Representative will issue final certificate in accordance with provisions of Conditions of the Contract.
- C. Prior to issuance of the Certificate for Final Payment by the Owner's Representative, all requirements contained in this Paragraph entitled "Closeout Requirements" and other requirements of the Conditions of the Contract shall be executed, received and approved by the Owner's Representative.

**END OF SECTION**

**SECTION 017839  
PROJECT RECORD DOCUMENTS**

**PART 1 - GENERAL**

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1.1 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The Work of this Section includes, but is not limited to, requirements for the following procedures:
1. Record prints
  2. Final record drawings
  3. Operations and maintenance submittals and instructions.
- B. Related work includes, but is not limited to, the following work under other Sections:
1. Availability and restriction for use of project electronic files: Section 011400 Work Restrictions.
  2. Availability of electronic files for preparation of record documents: Section 011400 Work Restrictions.
  3. Surveying and field engineering: Section 013100 Project Management and Coordination.
  4. Photographic documentation of construction: Section 013200 Construction Progress Documentation.
  5. General requirements for submittals: Section 013300 Submittal Procedures.
  6. Other submittals required at the completion of the Work: Section 017700 Closeout Procedures.

1.3 DEFINITIONS

- A. Record Prints are full sets of black-line or blue-line prints of Contract Drawings, kept at the Project Site and marked regularly to record as-built conditions as specified herein.
- B. Final Record Drawings: Reproducible drawings or electronic files prepared from completed and approved Record Prints.
- C. Final Record Coordination Drawings: Reproducible drawings or electronic files prepared from updated prints of approved coordination drawings, to record as-built conditions.

1.4 SUBMITTALS

- A. Record Prints: Periodic submittal of prints of Drawings marked to indicate Work completed and changes in the Work, as specified in this Section:

1. Record Prints
  2. Coordination Drawing Record Prints
- B. Final Record Drawings: Reproducible drawings, as specified in this Section:
1. Final Record Drawings
  2. Final Record Coordination Drawings
- C. Operations and Maintenance Submittals:
1. Maintenance Manuals
  2. Schedule of Training and Instruction for mechanical and electrical systems.

## **PART 2 - PRODUCTS**

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### 2.1 RECORD DOCUMENTS, GENERAL

- A. The General Contractor shall maintain Record Prints of site plans, landscape drawings and electrical drawings.

### 2.2 RECORD PRINTS

- A. During the progress of the Work, the General Contractor shall keep on file two (2) complete and separate sets of black line prints of the entire set of Contract Drawings. Each set shall be updated weekly to record the following information:
1. Status of Work: One set shall be used to indicate the progress of the Work installed by coloring in the work as installed.
  2. Revisions: The second set shall be accurately and promptly updated with colored inks, weekly as the Work progresses, to accurately record revisions to the Work, including, but not limited to, the following:
    - a. Locations, elevations, sizes, etc. of concealed and buried utilities, ducts, and services, including exterior utility and storm drainage lines.
    - b. The General Contractor shall be responsible for assuring that the various revisions are delineated by the specific trades involved.
  3. Both sets shall be kept available for use and inspection by the Owner's Representative and the Owner.
- B. Refer to Section 011400 Work Restrictions for Project Electronic Files to be made available for use by the Contractor in the preparation of Final Record Drawings.
- C. Transfer information from the updated Record Prints to the electronic files by Substantial Completion.

### 2.3 FINAL RECORD DRAWINGS

- A. Before completion of the Work, and when directed by the Owner's Representative, the General Contractor and subcontractors shall perform the following:
1. Transcribe previously recorded information from Record Prints onto the electronic files.

2. Make final changes and corrections to the electronic files for the Final Record Drawings.
  3. Signatures Required: Contractor shall sign each drawing for which they are responsible, as certification that the work was installed as shown.
  4. Deliver signed, completed Final Record Drawings to Owner's Representative.
- B. Acceptance by the Owner's Representative of the completed Final Record Drawings shall be a prerequisite for Substantial Completion.
- C. Shop Drawings will not be acceptable as Final Record Drawings for the Project.
- D. The Owner's Representative shall be the sole judge of the acceptability of Final Record Drawings.
- E. Special Requirements for Final Record Drawings of Site Work:
1. Record Drawings for exterior utilities and other items below grade shall include accurate locations of the following:
    - a. The points where such items enter the building and property lines.
    - b. Turns, offsets, and other changes in direction below grade.
    - c. Valves and other appurtenances.
  2. Indicate locations of these items using dimensions to adjacent permanent benchmarks or structures as approved by the Owner's Representative. Reliance on scale only to locate any temporary or concealed construction will not be acceptable.
  3. Final Record Drawings for work below grade shall be submitted immediately upon completion of utility line installation and prior to concealment of the work.
  4. Refer to Division 2 Sections for additional requirements for Final Record Drawings of site work.

#### 2.4 RECORD COORDINATION DRAWINGS

- A. Record progress of the Work and modifications and corrections on a set of prints of approved coordination drawings. Follow procedures as for Record Prints.
- B. Final Record Coordination Drawings shall be prepared using information from approved record copies of coordination drawings as for Final Record Drawings.

#### 2.5 MAINTENANCE MANUALS

- A. Upon Substantial Completion of the Work, submit maintenance schedules, maintenance manuals, and approved Shop Drawings, presenting full details for care and maintenance of visible surfaces and equipment furnished and installed under the Contract.
- B. Maintenance manuals shall consist of manufacturer's catalog cuts with descriptive information, lubricating and maintenance instructions, parts lists, usage instructions, names, addresses and telephone numbers where replacement parts and service can be quickly obtained, and other information required for the Owner to use, maintain, and service the items properly.
- C. Upon Owner's Representative's approval of drafts, submit two (2) corrected copies properly bound in a logical and well arranged order, with index, to the Owner's Representative for transmittal to the Owner.

### **PART 3 - EXECUTION**

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#### **3.1 TRAINING AND INSTRUCTIONS**

- A. The Contractor shall arrange for instruction for the Owner's employees, to insure proper operation of the equipment furnished.
  - 1. It is the intent of this paragraph to require the Contractor to furnish as much detailed instruction as is necessary to educate the Owner's on-site personnel in the proper use of the equipment.
  - 2. This instruction shall be provided by a qualified trainer who is also a manufacturer's certified technician with expertise with the specific system or equipment for which training is required. In some cases, this may require more than one visit to the Project by those responsible for the instruction.
  - 3. Submit the schedule for instructional sessions to the Owner. Do not proceed with instruction until Owner has approved schedule.
  - 4. Refer to specific technical sections for additional requirements specific to particular equipment and systems.

**END OF SECTION**

**SECTION 024113  
SITE PREPARATION AND DEMOLITION**

**PART 1 – GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Provide labor, materials, equipment, services and transportation required to complete work.
1. Protect in place existing trees and vegetation to remain.
  2. Provide erosion and sediment control devices to minimize erosion and siltation during construction.
  3. Clear, grub, remove and dispose of shrubs, turfgrass, vegetation and properly dispose of off-site.
  4. Strip and stockpile existing top soil and subsoils.
  5. Remove and dispose of existing Items:
    - a. Bituminous concrete paving and base
    - b. Portland cement concrete paving and base
    - c. Chain Link Fence and Gates
    - d. Conduit and wiring
    - e. Top soil and subsoil materials
  6. Protect in place select existing items to remain:
    - a. Existing Trees within Hancock Cemetery whose root systems extend into the Site Area.
    - b. Hancock Cemetery Granite Walls and Posts and Fencing
    - c. City Hall Annex parking lot curbing and paving.
    - d. Bench marks and boundary markers
    - e. Chain link fence on concrete wall on MBTA property
    - f. Other existing improvements indicated to remain
  7. Protect in place existing utilities to remain:
    - a. Utilities and related enclosures between Hancock Cemetery and MBTA right-of-way
    - b. Utility structures and piping for utilities to remain in service
    - c. Conduit and wiring for utilities to remain in service
  8. Coordination with Electrical Utility to disconnect and remove wood pole, light, wiring and terminate electrical service after new lighting system is operational.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Section 330000 – Site Cast in Place Concrete for footings and foundations.
- B. Section 310000 – Earthwork

1.04 DEFINITIONS

- A. Tree: Deciduous or coniferous woody plant material.
- B. Debris: Material such as trash, rubbish, concrete, bricks, fencing, culverts, windfalls, decaying matter, ash, etc. including materials generated from demolition of existing structures, surface materials, utilities, and brush and tree removal.
- C. Dripline: The area directly beneath the edges of a tree's canopy where the majority of its roots occur. The dripline is one common method used to define a tree's protected root zone (PRZ).
- D. Protected Root Zone (PRZ): The area in which construction activity and damage should be avoided is called the PRZ. It is defined by its critical root radius which is calculated by measuring the tree's trunk diameter (dbh) 4.5 feet above the ground in inches. For each inch, allow 1-foot to 1.5-feet of critical root radius. For example, if a tree's dbh is ten inches, the critical root radius is 10-feet to 15-feet. Use the following for determining the DPZ:  $dbh \times 1.5 =$  critical root radius

1.05 SUBMITTALS

- A. Submittals: in accordance with Section 013300 – Submittal Procedures.
- B. Product Data: Submit manufacturer's technical product data for:
  - 1. Siltation control materials and products.
  - 2. Tree protection fencing and staking.
- C. Schedule: submit a schedule indicating proposed sequence of operations for site preparation and demolition work to Owner's Representative for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection.
  - 1. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
  - 2. Provide detailed definition of stockpiling and staging areas as well as detailed definition of areas to be protected.
- C. Pre-construction survey photographs: photographs in electronic format documenting existing conditions of structure surfaces, equipment, and adjacent improvements that might be misconstrued as damage related to removal operations. File with Owner's Representative prior to start of work.
- D. Plan: submit a plan indicating stockpile areas and equipment and materials storage areas to the Owner's Representative's for review and approval. Provide security measures to protect the work and equipment at no additional expense to the Owner.

- E. Submit the dumpsite to Owner for approval prior to waste removal from project site.

#### 1.04 QUALITY ASSURANCE

- A. Pre-demolition Conference: Contractor, Owner and Owner's Representative, shall meet at the project site to review locations, removal procedures, acceptance of procedure, and coordination.

- 1. Schedule meeting at least 1-week before start of removals.

#### 1.05 REGULATORY REQUIREMENTS

- A. Obtain required permits from authorities.
- B. Notify affected utility companies before starting work and comply with their requirements.
- C. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

#### 1.06 PROTECTION

- A. The Contractor shall assume complete responsibility and liability for the safety and structural integrity of work and utilities to remain during demolition.
- B. Provide safeguards including, but not limited to, warning signs, barricades, temporary fences, warning lights and other items required for protection of personnel and the general public during performance of all work in accordance with Section 015000 – Temporary Facilities and Controls.
- D. All features related to protection shall be maintained until that unit of work has been completed to the point that the danger no longer exists. Remove protections at completion of work.

#### 1.07 DAMAGES

- A. Promptly repair damages caused to adjacent facilities by demolition work and notify the Owner of these damages prior to commencement of repair.

#### 1.08 ENVIRONMENTAL CONTROLS

- A. Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.
- B. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

#### 1.09 PROJECT CONDITIONS

- A. Traffic: Conduct construction operations to ensure minimum interference with streets, walks, and other adjacent occupied or used facilities. Do not close, block, or otherwise obstruct streets, public perimeter sidewalks, or other occupied or used facilities without written permission from authorities having jurisdiction.

- 1. Coordinate with local police, fire and public works departments in staging temporary traffic patterns.

2. Keep streets and perimeter walks swept clean.
  3. Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities.
- B. Protection of Existing Improvements: Provide protection to prevent damage to existing improvements indicated to remain in place or outside of the limit of work.
1. Protect improvements on adjoining properties and on the City of Quincy property.
  2. Restore improvements damaged by the Contractor's clearing activities to their original condition, at no additional expense to the Owner.
- C. Locate, protect, and maintain active utilities to remain.
- D. The following practices are prohibited within tree protection zones:
1. Storage of construction materials, debris, or excavated material.
  2. Parking vehicles or equipment.
  3. Excavation or other digging unless otherwise indicated.
  4. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- E. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
1. Conditions existing at time of inspection for bidding purposes will be maintained by Owner, insofar as is practicable. However, minor variations within structure may occur prior to start of selective demolition work.
- F. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
1. Storage or sale of removed items on site will not be permitted unless approved by City of Quincy.
- G. Perform site preparation work before commencing site construction.
- H. Provide barricades, coverings, and protection to prevent damage to existing improvements to remain, and to protect the public safety.
- I. Restore to original grades and conditions areas adjacent to site disturbed or damaged as a result of site preparation work.

## **PART 2 – MATERIALS**

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### 2.01 SEDIMENT CONTROL FABRIC FOR CATCH BASINS

- A. Sediment control fabric shall be UV resistant woven polypropylene fabric and must be manufactured to fit catch basin opening.
1. Fabric shall have a minimum Grab Strength of 265 lbs., minimum puncture of 120 lbs, and permittivity of 0.5 to 1.5 sec-1.
  2. Sediment control fabric must have integral lifting system to aid removing the fabric from the drain structure.

## 2.02 SEDIMENT CONTROL/EROSION CONTROL BARRIERS

- A. Hay Bales: new, firm, nylon-bound livestock feed-grade. Hay bales to be installed with ends butted tightly together. Provide two stakes per hay bale. Stakes are 4 feet long and driven a minimum of one foot into the ground.
- B. Silt Fence: Posts should be spaced a maximum of 6 feet apart. The bottom edge of the geotextile is to be buried a minimum of 6 inches in a vertical trench with the soil pressed firmly against the embedded geotextile. A polyester or nylon cord (minimum diameter 1/8 inch) should be sewn into a seam running continuously along the top of the geotextile. Each post should be securely fastened to the geotextile by a minimum of five one inch-long gun staples suitable for this purpose. Staples should be diagonal to the threads of the geotextile fabric.
- C. Erosion Control Sock: a minimum of 8" diameter by 20' length, and made from natural materials. The socks shall be filled with chipped, recycled wood

## 2.03 GROUND PROTECTION MATS

- A. VersaMats Ground Protection Mats to be supplied by AlturnaMATS, Inc P.O. Box 344, Titusville, PA 16354 or approved equal.

## 2.04 SOIL MATERIALS

- A. On Site Topsoil excavated and stockpiled from existing on site lawn areas (to a depth of 6") will removed and disposed of offsite.
- B. Lawn Planting Soils for lawns areas as specified in Section 329200 – Seeded Lawns

## 2.07 BACKFILL

- A. Contractor shall provide Gravel Borrow to fill holes or voids left by removal of site improvements, unless the Contract Documents direct otherwise.
- B. Gravel Borrow: Imported granular fill meeting the requirements of MHD Standard Specification M1.03.0, Type B.

## 2.08 UTILITY ABANDONMENT

- A. Provide concrete, mortar, brick, caps or plugs, and other material needed to cap off or plug pipes of various sizes and kinds where indicated as being abandoned, in accordance with BWSC requirements and specifications.

## **PART 3 – EXECUTION**

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### 3.01 GENERAL EROSION AND SEDIMENT CONTROL

- A. Retain sediment on site.
- B. Install, inspect and receive approval for erosion and sedimentation device and controls by the appropriate authority prior to site preparation, site clearing and grubbing operations and earthwork operations.
- C. Maintain erosion control inspection reports in accordance with local, state and federal requirements and the construction documents.

- D. Install fabric under grates of existing and newly installed catch basins, leaving a minimum of six (6) inches of excess fabric on all sides.
- E. Use water sprinkling and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and/or pollution.

### 3.02 MAINTENANCE AND REMOVAL OF EROSION CONTROL DEVICES.

- A. Erosion Control Devices:
  - 1. Check sediment behind the erosion control devices and in catch basins twice a month and after each rain event of one half inch or greater. Remove silt if greater than 6 inches deep at erosion control devices. Empty sediment control fabric in catch basins when  $\frac{3}{4}$  full.
  - 2. Maintain erosion control devices in place and in effective condition. The underside of hay bales must be in close contact with the earth below to prevent water from washing beneath them.
  - 3. Perform operations and maintenance for erosion control in accordance with local, state and federal requirements and the construction documents.

### 3.03 LOCATING AND PROTECTING EXISTING UTILITIES

- A. Verify the location of utilities in the limit of work before starting work, including but not limited to gas, electric, telephone, storm drainage, sanitary drainage, fiber optic, telecommunication, cable, and water services.
- B. Locate and mark underground utilities to remain in service before beginning work. Markings shall remain throughout the length of the project.
- C. Protect existing utilities to remain during operations. In work on or around the utilities, follow rules and regulations of the respective utility. Do not interrupt existing utilities except as authorized by authorities having jurisdiction. Provide not less than 72 hours written notice to Owner if shut down of utility service is required.
- D. Protect active utilities from damage and remove only as indicated on Drawings or as directed by Owner's Representative. Where active utilities are encountered but not shown on Drawings, notify the Owner's Representative immediately in writing. Protect and maintain these utilities until written instructions are received from the Owner's Representative.
- E. Report inactive and abandoned utilities and drains encountered in removal operations to the Owner's Representative immediately.

### 3.04 PROTECT EXISTING PLANTS TO REMAIN

- A. Tree Protection Basics: review and be familiar with the following information to ensure protection of existing trees and their root zones:
  - 1. The majority of a tree's roots are located in the upper twelve to eighteen inches of soil making them vulnerable to immediate and long-term damage associated with surface activity. Damage is caused by soil compaction and soil disturbance caused by grading, construction activities, pedestrian and vehicular, activities and storage of materials.

2. Tree Protection includes its root system, trunk, branches, and leaves. Roots are protected by restricting access to the largest area practical radiating out from the center of each tree to minimize soil compaction or disturbance of the root systems.
  3. Tree roots extend horizontally into soil areas well beyond the outer perimeter of the tree's canopy or "dripline". For this reason, operations should be confined to the smallest possible area and at a minimum provide protection within the tree canopy "drip line."
  4. Soil is most vulnerable to compaction, and roots to damage, when the soil is wet. Minimize construction activities when these conditions are present.
  5. The Owner's Representative reserves the right to require additional tree protection devices if it is determined that existing trees are not being properly protected or if the vegetation is being damaged by the Contractor's operations. If the Owner's representative determines that trees are not being protected to the standards herein, he may order construction activity to stop until the non-compliant condition or practice is corrected.
- B. Tree Protection Fence Placement: provide and maintain protection fencing around existing trees as shown on the Drawings. Fencing shall be placed at the extent of drip line of the tree. Where placement at extent of branch spread would severely impact efficiency of operations, fence shall be placed 10 feet minimum from face of tree trunk. Install fencing at mobilization and maintain until substantial completion with the approval of the Owner's Representative.
- C. Protection of Tree and Root System: Protect existing trees to remain in place against cutting, burning, breaking, skinning and bruising of bark, and damage to and smothering of roots. Protect tree root system from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations. Prevent soil compaction over root systems.
- D. Tree Trunk Protection: The Contractor shall provide 2 in. by 4 in. by 8 ft boards banded continuously around each trunk to prevent scarring of existing trees. For multistem trees, saplings, and shrubs to be protected within the area of construction, approved temporary fencing may be used for trunk protection.
- E. Root Systems Protection beyond Tree Protection Fence: In instances where root system of tree extends beyond tree protection fence line into the work zone, place ground protection mats to form a continuous, solid working surface to prevent compaction of tree roots.
- F. Temporary Relocation of Tree Project Fencing: Fencing may be moved to provide temporary access within plant protection areas is permitted to perform construction operations during construction in order to complete sitework. Obtain approval from Owner's Representative for review of scope within the fenced zone prior to commencing work. Care should be taken to minimize disturbance to tree roots, trunk and canopy during these operations. Tree protection fence shall be restored at the end of each day's operation, back to its original location to protect trees from damage. Fencing damaged during construction shall be immediately reinstalled at no additional cost to the Owner.
- G. Excavation within Tree Driplines: Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots. Relocate roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and relocate them without breaking. Where utility trenches are required

- within drip line of trees, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.
- H. Root Pruning: No roots greater than two inches in diameter shall be cut from trees to remain without prior approval from Owners representative. Do not cut main lateral roots or taproots. Cut only smaller roots that interfere with installation of structures. Cut roots with sharp pruning instruments; do not break or chop; cutting of roots with machinery is expressly prohibited. When roots that must be cut are encountered, work shall cease until roots have been properly cut. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
  - I. Canopy Pruning: Prune existing trees to compensate for root loss or damage anticipated or caused by construction activities, whether or not those activities were required to complete the work of this contract. Confer with Owner's Representative prior to construction to determine if pruning is necessary. Do not prune vegetation without written approval of Owner's Representative. If Owner's Representative deems pruning necessary, it shall be done in a manner compliant with the American Association of Nurserymen, Horticultural Standards to preserve the natural character of the plant. Remove broken or badly bruised branches with a clean saw cut. Pruning shall be done by skilled, certified arborists in accordance with best horticultural practice, appropriate to the type of plant and to its special or individual requirements. Pruning performed to compensate for root loss or damaged branches, that is not necessary to complete the work of this contract, shall not indemnify Contractor to take other specified measures to correct and/or compensate the owner for the injury or death of plants.
  - J. Operating Machinery within Tree Driplines: only with prior approval from Owners representative, prevent soil compaction by placing tree root protection mats on grade. Overlap mat panels 12 inches min. or as recommended by manufacturer.
  - I. Grading:
    - 1. Maintain existing grade within drip line of trees or within tree protection fence, unless otherwise indicated.
    - 2. Grade Lowering: where new finish grade is indicated below existing grade around trees, slope grade beyond drip line of trees. Maintain existing grades within drip line of trees.
    - 3. Minor Fill: Where existing grade is 6 inches (150mm) or less below elevation finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.
  - K. Prohibitions:
    - 1. Do not use existing trees for crane stays, guy anchors, or other fastenings.
    - 2. Do not perform the following within tree drip lines: drive or park vehicles; stockpile construction materials, debris and excavated material; remove and stockpile soils within tree drip lines.
    - 3. Do not use trees as benchmarks, mark with paint, or install nails.

- L. Maintenance:
    - 1. Water trees and other vegetation to remain within limits of contract work to maintain their health during course of construction operations.
    - 2. Provide temporary drainage where required to avoid ponding during construction operations.
    - 3. Fertilizing: After pruning operations are completed, Owner's Representative will determine if fertilization is needed for existing vegetation.
    - 4. Tree protection materials to be maintained and become the property of the Contractor upon removal.
  
  - M. Damaged Tree and Vegetation Repair: Repair trees and vegetation to remain that are damaged by construction operations in a manner acceptable to the Owner's Representative.
    - 1. Owner shall engage a qualified Arborist to inspect damaged trees and to make a determination on damage, sustainability, and remediation procedures.
    - 2. Adhere to the Arborist's recommendations.
    - 3. The total cost of tree repair, shall be borne by Contractor.
  
  - N. Damaged Tree and Vegetation Replacement: If the Arborist determines that the damaged tree and vegetation cannot be repaired and restored to full-growth status, replace the damaged tree(s) and and vegetation and pay liquidated damages as noted below.
    - 1. Replace damaged tree. Replacement tree size shall equal ½" caliper for every 1" caliper inch of the damaged tree. Species and source of the replacement tree shall be determined by Owner's Representative.
    - 2. In addition to providing a new tree replacement, pay Owner \$250.00 for every caliper inch of damaged tree.
    - 3. An example of the conditions stated above: A 20" caliper tree was damaged and determined to need replacement. To remedy this situation, purchase and install a 10" caliper tree and pay the Owner \$5,000 (Size of tree to be determined by Owner's Representative or certified arborist).
    - 4. The total cost of tree replacement, shall be borne by Contractor.
- 3.05 PROTECT EXISTING IMPROVEMENTS
- A. Provide protections to prevent damage to existing improvements indicated to remain in place and newly constructed improvements on Owner's property.
  - B. Protect existing improvements on adjoining properties from damage.
  - C. Restore damaged improvements to their original condition, as acceptable to the Owner's Representative and parties having jurisdiction, at no cost to Owner and parties having jurisdiction.

### 3.06 CLEARING, GRUBBING, REMOVAL AND DISPOSAL OF VEGETATION

- A. Clear materials to the limits shown, or to a minimum depth of 18" and completely remove from site in a legal manner. Clear, grub and remove surface vegetation in areas indicated to be improved. Depressions made by grubbing shall be filled with suitable material and compacted to make surface conform to original adjacent ground surface.
- B. Fell trees to be removed as to avoid injuring trees to remain. Where overhead lines, private property, life or traffic might be endangered by the felling of a tree in one piece, remove it in sections as large as possible to handle safely. Remove dead branches of trees to be protected, and, with the Owner's Representative and certified arborist approval, limbs which interfere with construction work. Pruning shall be done according to industry standard practice and with the approval of the Owner's Representative and certified arborist.
- C. Remove and dispose of cleared and grubbed plants. Remove stumps and roots encountered below grade completely by grinding or removing.
- D. Fill depressions from demolition and removal with appropriate soil materials in layers 6" thick compacted to a density equal to adjacent grade to a depth within 8" of finish grade.

### 3.06 SOILS MANAGEMENT

- A. Strip, remove and properly dispose of off-site, existing top soil and sub soils and provide new top and landscape subsoils as specified in Section 319113 – Planting Soils.
- B. Notify Owner's Representative where proposed grades require grading within the area of conflict with the root zones of existing trees to remain. Where, as directed by the Owner's Representative, removal of topsoil is necessary under canopies of trees to remain, hand dig topsoil and take precautions to prevent damage to roots.

### 3.08 STOCKPILES

- A. Neatly trim and grade stockpiles to provide positive drainage from surfaces and to prevent depressions where water may become impounded. Perform construction operations as not to cause mixing of objectionable materials with the soils and stockpiles shall be protected and shall not be disturbed except for subsequent soil management operations.

### 3.09 DEMOLITION AND ABANDONMENT

- A. Demolish and remove of existing items and transport to an approved off site facility.
- B. Abandonment of existing sanitary sewer, storm drain and water services to be cut and capped off at the mains in the street. Coordinate with the appropriate authorities. Coordinate electrical abandonments and relocations with National Grid.
- C. Where drainage structures are indicated on the Drawings to be abandoned, inlets and outlets shall be plugged with at least eight (8) inches of brick and mortar masonry. Upper portions of masonry structures shall be removed to a depth of three feet. The structure shall be filled with suitable backfill material placed in six (6) inch layers and thoroughly compacted at each level.
- D. Plug previously abandoned drain pipes encountered with masonry brick at least eight (8) inches in thickness.
- E. Water supplies shall be cut off and capped with a municipal-approved compression fitting.

- F. Electrical conduits encountered and previously abandoned shall be capped or plugged.
- G. Coordinate gas main abandonments with National Grid.
- H. Remove and properly dispose off-site of utility structures, piping, street lighting, fire alarms, and conduit within the limit of work unless indicated to remain on the plans.
- I. Debris becomes the property of the Contractor and must be properly disposed off the project site at no additional cost to the Owner.

### 3.12 REMOVAL OF EXISTING IMPROVEMENTS

- A. Remove above-grade and below-grade improvements necessary to permit construction and other work as indicated. Demolish and remove existing improvements to the extent indicated on Drawings.
- B. Remove existing improvements including base material, as required to accommodate new construction.
- C. Remove utility structures and piping, indicated on the Drawings as abandoned, to the specified limits of excavation, if encountered. Plug ends of abandoned piping that are exposed with concrete. Backfill abandoned utility structures encountered below the limits of excavation, and compact with gravel in lifts not exceeding six (6) inches.
- D. Remove designated items temporarily relocated during construction, and reinstall in final location.
- E. Cavities caused by the removal shall be properly backfilled and compacted with gravel base material in lifts not exceeding six (6) inches.
- F. Demolish and remove below-grade footings and foundations to a depth of at least forty-eight (48) inches below finish grade or as noted on the drawing.

### 3.14 DISPOSAL OF WASTE MATERIALS AND CLEANUP

- A. Keep pavement areas and areas adjacent to and leading from the site clean and free of mud, dirt and debris.
- B. Maintain erosion control devices until disturbed earth has been paved or vegetated and the site has been inspected and approved by the local authorities. After removing erosion control devices, regrade and seed areas disturbed by these devices.
- C. Remove improvements indicated to be removed and waste and spoil materials from Owner's property and dispose of off-site, legally, unless otherwise indicated. Accumulation is not permitted. Dumping and burning on-site is not permitted.
- D. Materials, items and equipment not scheduled for reinstallation or salvage for the Owner's use, remain the property of the City of Quincy. If the City of Quincy determines such materials are not desired then these materials become the property of the Contractor. Remove cleared materials from the site as the work progresses. Storage of Contractor's salvaged items on-site is not permitted.
- E. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

3.15 POST CONSTRUCTION CLEAN-UP AND REPAIR

- A. Upon completion of site preparation work, clean areas within contract limits, remove tools and equipment. Provide site clean and free of materials and debris and suitable for site work operations. Leave the site in a safe and clean condition satisfactory to the Owner's Representative.
- B. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start of operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

**END OF SECTION**

**SECTION 033000**  
**SITE CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- B. Provide labor, materials, equipment, services and transportation required to complete work.
  - 1. Cast-in-place concrete, including but not limited to: foundations, footings, frost walls, grade beams, slabs-on-grade, equipment pads, concrete encasement, and thrust blocks, complete, and all other concrete work, as indicated on the Drawings and as specified.
  - 2. Coordinate and install embedded items required to support or attach to the work of other trades. The embedment items shall be supplied by other Sections.
  - 3. Coordinate, supply and install reinforcing dowels required for the attachment of or to adjacent masonry construction.
  - 4. Coordinate and install sleeves for mechanical penetrations.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Section 260000 – Site Electrical for lighting and pole mounted security cameras.
- B. Section 310000 – Earthwork for subbase and backfill.
- C. Section 321313 - Chain Link Fence for fencing and gates.

1.04 REFERENCES

- A. Comply with applicable requirements of:
  - 1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridges, Department of Public Works, latest edition, Boston, Massachusetts.
  - 2. ASTM: American Society of Testing Materials.
  - 3. AASHTO: American Association of State Highway and Transportation Officials.
  - 4. A.C.I. – American Concrete Institute
  - 5. C.R.S.I. – Concrete Reinforcing Steel Institute

## 1.05 REFERENCE STANDARDS

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirement shall govern.

1. American Concrete Institute (ACI):

212	Guide for Use of Admixtures in Concrete
301	Specifications for Structural Concrete for Buildings.
304.2	Placing Concrete by Pumping Methods
305	Hot Weather Concreting
306	Cold Weather Concreting
316	Recommended Practice for Construction of Concrete Pavements and Concrete Bases.
318	Building Code Requirements for Reinforced Concrete

2. American Plywood Association (APA):

Ref. 1	APA Design/Construction Guide, Residential and Commercial
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3. American Society for Testing and Materials (ASTM):

A 185	Welded Steel Wire Fabric for Concrete Reinforcement
A 307	Carbon Steel Externally Threaded Standard Fasteners
A 563	Carbon and Alloy Steel Nuts
A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
C 33	Concrete Aggregates
C 42	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C 94	Ready-Mixed Concrete
C 143	Slump of Portland Cement Concrete
C 150	Portland Cement
C 171	Sheet Materials for Curing Concrete
C 231	Air Content of Freshly Mixed Concrete by the Pressure Method
C 260	Air-Entraining Admixtures for Concrete
C 309	Liquid Membrane-Forming Compounds for Curing Concrete
C 494	Chemical Admixtures for Concrete

- C 618 Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
- D 1557 Moisture - Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.5-kg) Rammer and 18-in. (457-mm) Drop
- D 1752 Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- F 436 Hardened Steel Washers

4. Corps of Engineers (COE):

- CRD-C 621 Specification for Nonshrink Grout: Hardened State  
(588) Volume Change

1.06 SUBMITTALS

- A. Submittals: in accordance with Section 013300 – Submittal Procedures.
- B. Samples of the following shall be submitted:

<u>Item</u>	<u>Sample Quantity and Size</u>
Preformed joint filler	Two pieces, full depth and width, 4 in. length

- C. Manufacturers' product data shall be submitted for the following items:
  - 1. Admixtures, each type
  - 2. Curing compounds
  - 3. Nonshrink grout
  - 4. Pipe sleeves
  - 5. Preformed joint filler
  - 6. Sieve analysis of aggregates
  - 7. Waterproof curing paper
- D. Prior to start of concrete work, Contractor shall submit to the Owner's Representative for review a schedule for execution of the Work of this Section.
- E. Shop drawings indicating the complete layout of architectural formwork including material specifications, layout details of formwork panels, joint locations, reveal locations, form tie locations, and other items which will be exposed to view or will create a visible delineation or mark of any kind on the face of the exposed concrete.
- F. Shop drawings indicating fabrication, bending diagrams, bar schedules, cutting lists and other information as required to completely define and establish the shape, size, location, and spacing of all reinforcing bars. Include details of splicing and keying at construction joints. Indicate grades of all reinforcing. Opposite hand reinforcing shall be detailed separately. Wall reinforcing shall be detailed on wall elevations.
  - 1. Review MEP drawings and identify all required housekeeping pads and their required reinforcing.

#### 1.07 DESIGN OF CONCRETE MIX(ES)

- A. Mix design shall be certified by independent testing laboratory. Statement of materials constituting design of mixes (as required by referenced standards) shall be submitted for Owner's Representative's approval within one week following award of Contract.
- B. Concrete mix design shall include the following information:
  - 1. Proportions of cement, fine and coarse aggregates, and water.
  - 2. Water-cement ratio, design strength, slump, and air content.
  - 3. Type of cement and aggregates.
  - 4. Type and dosage of all admixtures.
  - 5. Special requirements for pumping.
  - 6. Range of ambient temperature and humidity for which the design is valid.
  - 7. Any special characteristics of the mix which require precautions in the mixing, placing, finishing, or curing methods to achieve the finished product specified.
- C. No concrete shall be delivered to the job site until the Owner's Representative has approved the design mixes.

#### 1.08 QUALITY ASSURANCE

- A. Unless otherwise specified, cast-in-place concrete work shall conform to ACI 301 and ACI 318. Copies of these referenced standards shall be kept available in the Contractor's field office.
- B. Dimensions, locations, and details of equipment pads, anchors, supports, and similar features indicated on the Drawings are approximate. Manufacturer's approved shop drawings of equipment to be supported, anchored, or contained thereby shall be consulted for exact location, size, and details.

#### 1.09 TESTING

- A. Inspection and testing of the concrete mix will be performed by the Owner's Independent Testing Laboratory in accordance with Section 00 70 00 – General Conditions. Testing equipment shall be supplied by the laboratory, and the preparation of samples and all testing shall be performed by laboratory personnel.
- B. Concrete materials and operations will be tested and inspected by Owner as work progresses. Failure to detect any defective work or material shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the Owner's Representative to final acceptance.
- C. The following testing services shall be performed by the Contractor:
  - 1. Materials for compliance with the specifications.
  - 2. Proposed mix design.
  - 3. Sampling and testing of materials at plants or stockpiles during the course of the work for compliance with the specifications.
  - 4. Strength tests of concrete specimens.
  - 5. Inspection of concrete batching, mixing, and delivery.
  - 6. Additional testing and inspection required because of changes in materials or proportions requested by the Contractor.
  - 7. Additional testing of materials or concrete occasioned by their failure by testing or inspection to meet specification requirements.

- D. At Contractor's expense, at least six standard compression test cylinders shall be made and tested from each day's placement of each type and design strength of concrete. Six concrete test cylinders will be taken for every 50 cubic yards of each type and design strength of concrete placed. Two cylinders shall be tested at seven days, and two at 28 days. The remaining two cylinders will be held in reserve. If the results of the 28 day tests indicate low strength concrete, the Owner's Representative will direct the Testing Laboratory to test the remaining two cylinders at a time indicated by the Owner's Representative.
1. One additional test cylinder will be taken during cold weather concreting, and will be cured at the job site under the same conditions as the concrete it represents.
  2. If job experience indicates additional cylinder tests or other tests are required for proper control or determination of concrete quality, such tests shall be made.
  3. Where high-early strength (Type III) concrete is specified or permitted by the Owner's Representative, concrete cylinders shall be tested as follows: two at one day and two at seven days.
- E. One slump test and one air content test will be taken for each set of test cylinders taken.
- F. The Contractor shall provide free access to the work and shall provide full assistance and cooperation, concrete for samples, and such auxiliary personnel and equipment as needed for the testing agency to take samples for all required tests. The Contractor shall notify the testing agency and the Owner's Representative of his intent to place concrete at least two working days prior to scheduled time of placement.

#### 1.10 EVALUATION AND ACCEPTANCE

- A. The strength level of the concrete will be considered satisfactory if the averages of all sets of three consecutive strength test results equal or exceed specified strength and no individual test result (average of two cylinders) is below specified strength by more than 500 psi.
- B. Completed concrete work will be accepted when the requirements of ACI 301 Chapter 18 have been complied with.
- C. In any case where the average strength of the laboratory control cylinders, as shown by the tests for any portion of the structure, falls below the minimum ultimate compressive strength hereinbefore specified, the Owner's Representative shall have the right to require the Contractor to provide improved curing conditions of temperature and moisture to secure the required strength. Also, if the average strength of the laboratory control cylinders should fall so low as to cause the portions of the structure to which the respective unsatisfactory test reports apply to be in question by the Owner's Representative, the Contractor shall, at his expense, follow the core procedure set forth in the current edition of ASTM C 42. If the results of the core tests indicate, in the opinion of the Owner's Representative, that the strength of the structure is inadequate, such replacement, load testing, or strengthening as may be ordered by the Owner's Representative shall be provided by the Contractor without cost to the Owner.
- D. The Owner's Representative shall have the right to reject concrete represented by low strength tests. Rejected concrete shall be promptly removed and replaced with concrete conforming to the specification. The decision of the Owner's Representative as to whether substandard concrete is to be accepted or rejected shall be final.

## **PART 2 - MATERIALS**

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### 2.01 FORMS

- A. Cylindrical Forms: Sonotube Fibre Forms, wax-impregnated strippable forms manufactured by Sonoco Products Company, General Products Division or approved equal, or ABS or PVC plastic reusable forms.
- B. Forms for Exposed Finish: Plywood, metal, metal-framed plywood faced, or other acceptable panel materials. Plywood shall be APA Ref. 1 B-B (Concrete Form ), Class I Exterior Grade plywood or B-B or A-C Class I high density overlay concrete form plywood. Formwork materials shall produce smooth, continuous, straight and level surfaces.
- C. Forms for Unexposed Finish: Plywood, lumber or metal, with lumber dressed on at least two edges and one side.
- D. Form Ties: Provide prefabricated, adjustable length galvanized steel snap-off ties, with brackets, cones, cornerlocks and other accessories as necessary.
- E. Form Coatings: Commercial formulation compounds that will not bond with, stain or adversely affect concrete.
- F. Forms shall be true to line and free from warp, and shall be of sufficient strength, when staked, to resist the pressure of the concrete without springing. Formwork shall be designed so that sections may be fastened together to prevent vertical or horizontal movement of ends.

### 2.02 CONCRETE MIX

- A. Concrete shall be air entrained type, conforming to ASTM C 94. One copy of the Certificate of Delivery required by ASTM C 94 shall be delivered to the Owner's Representative immediately upon arrival of each load of concrete at the site.
- B. Unless otherwise indicated on the Drawings, minimum 28 day compressive strength shall be 4,000 psi.
- C. Concrete slump shall be no less than 2 in. nor greater than 4 in., determined in accordance with ASTM C 143.
- D. Air content by volume shall be 3 to 6%, and shall be tested in accordance with ASTM C 231. "Relative durability factor" of concrete containing air-entrainment admixture shall be at least 90.
- E. Concrete shall contain a water reducing agent to minimize water-cement ratio of the mix, at the specified slump.
- F. No calcium chloride or admixtures containing calcium chloride shall be added to the concrete. No admixtures other than those specified shall be used in the concrete without the specific written permission of the Owner's Representative.
- G. No additional water, except for the amount indicated by the design mix shall be added to the concrete without prior permission of the Owner's Representative.
- H. No concrete shall be placed by pumping methods without the prior written approval of the Owner's Representative. Should the Contractor be allowed to place concrete by pumping methods, pumping procedures, mix design of concrete, and all other precautions shall be in accordance with ACI 304 and shall be subject to review by the Owner's Representative.

### 2.03 CONCRETE REINFORCING

- A. Steel reinforcing bars shall conform to ASTM A 615.
  - 1. Bars employed as reinforcement shall be deformed type.
  - 2. Bars employed as dowels where indicated on the Drawings shall be hot-rolled plain rounds.
  - 3. Unless otherwise indicated on the Drawings, reinforcing bars shall be Grade 60.
- B. Welded wire fabric reinforcement shall conform to the applicable requirements of ASTM A 185. Fabric reinforcement shall be furnished in flat sheets. Fabric reinforcement in rolls will not be permitted.

### 2.04 CEMENT

- A. Cement shall be an approved brand of American manufactured Portland cement, conforming to ASTM C 150, Type I or II. Submit manufacturer's name and type of cement for Owner's Representative's approval immediately.
- B. Only one color of cement, all of the same manufacturer, shall be used for the work.
- C. Do not use Type III cement without Owner's Representative's approval.

### 2.05 ADMIXTURES

- A. Except as otherwise specified, use of concrete admixtures shall conform to ACI 212.
- B. Admixtures employed shall be produced and serviced by established, reputable manufacturer and used in compliance with manufacturer's recommendations.
- C. Air entraining agent shall conform to ASTM C 260 and shall be "Daravair" or "Darex AEA", manufactured by W.R. Grace & Company; "Airmix" or "Perma-Air", manufactured by The Euclid Chemical Co.; "MB-WR", manufactured by Master Builder's Co., or an approved equal product.
  - 1. When a high range water reducing (HRWR) admixture is used, air-entraining admixture shall be a neutralized vinsol resin solution.
  - 2. When requested by the Owner's Representative, certification attesting to compliance with these specifications shall be furnished.
- D. Water reducing agent shall conform to ASTM C 494, Type A and shall contain no more than 0.05% chloride ions. Water reducing agent shall be "WRDA with Hycol", manufactured by W.R. Grace & Company; "Eucon WR-75" manufactured by The Euclid Chemical Co.; "Pozzolith 200N", manufactured by Master Builders's Co., or approved equal product.
  - 1. Water reducing agent shall be manufactured by same manufacturer as air-entraining agent.
- E. Water reducing agent-retarder shall conform to ASTM C 494, Type D and shall be "Daratard-40", manufactured by W.R. Grace & Company, or an approved equal product.
- F. Fly ash conforming to ASTM C 618, equal to TPA, manufactured by the Trinity Division of General Portland Inc., may be used in non-architecturally exposed concrete. Carbon content shall not exceed 3% by volume.

1. When required, certification attesting to the carbon content and compliance with ASTM C 618 shall be submitted to the Owner's Representative.
  2. Maximum replacement of cement with fly ash shall be 15% by weight.
- G. Superplasticizers: Where permitted by the Owner's Representative and where indicated in the approved concrete design mix, a high-range water-reducing (HRWR) admixture (superplasticizers) complying with ASTM C 494, Type F or Type G, and containing more than 0.05% chloride ions, may be used subject to the following requirements:
1. When a high range water-reducing admixture is used, the air-entraining admixture shall be a neutralized vinsol resin solution.
  2. Concrete shall arrive at the jobsite having a slump conforming to the requirements specified in Paragraph 2.01. HRWR shall be added after the concrete has been thoroughly mixed and the desired initial slump has been achieved.
  3. Water to cement ratio shall not exceed 5.0 gal/cwt (0.42 weight basis).
  4. Pretesting of the concrete shall be performed under the guidance of the admixture manufacturer's representative to determine dosage, addition times, and compatibility with other admixtures and mixture constituents.
  5. HRWR shall be added at the job site and shall be dispensed to the truck mixer using automatic dispensing equipment which accurately measured dosage.
  6. Slump after addition of HRWR to concrete shall be no greater than is necessary for proper placement and compaction and shall in no case exceed 7 in.
  7. Air tests shall be run on the admixed concrete as placed, and air content shall be within the specified limits.
  8. HRWR admixture shall be "Melment", manufactured by American Admixtures Corp., Chicago, IL; "WRDA-19", manufactured by W. R. Grace & Co.; "Daracem 100", manufactured by W.R. Grace & Co.; "Eucon 37", manufactured by The Euclid Chemical Co.; "Sikament", manufactured by Sika Chemical Co., or approved equal.
  9. Dosage as determined by mix design.
- 2.06 AGGREGATE
- A. Except as otherwise noted, aggregate shall conform to ASTM C 33.
  - B. Maximum size aggregate for sections 16 in. or greater in thickness shall be 1-1/2 in. Maximum size aggregate for sections less than 16 in. thick shall be 3/4-in.
  - C. Maximum size of aggregate shall in no case exceed that permitted by ACI 318.
- 2.07 WATER
- A. Water shall conform to ASTM C 94, Section 4.1.3.

## 2.08 GROUT

- A. Grout shall be mixed in the proportions of one part Portland cement to two parts sand, by volume. Only sufficient water shall be used to enable grout to barely hold its shape when squeezed into a ball in the hand. Sand for grout shall be ASTM C 33 Fine Aggregate.
- B. Non-shrink grout shall be pre-mixed non-shrinking, high strength grout. Compressive strength in 28 days shall be 5,000 psi minimum, but in no case less than the specified strength of the adjacent concrete. Manufacturer shall provide evidence that the material meets the requirements of the COE CRD-C 621 (558). Grout permanently exposed to view shall be non-oxidizing; metallic grout may be used in other locations.

- 1. Nonshrink grout shall be one of the following, or approved equal:

<u>Manufacturer</u>	<u>Product</u>
Gifford-Hill Co.	Supreme
Master Builders Co.	Embeco
U.S. Grout Corporation	Five Star Grout

## 2.09 CURING MATERIALS

- A. Curing shall be by moist curing. Refer to Section 03 30 00, Par 3.12 for curing procedures.
- B. Curing paper shall be a nonstaining, fiber reinforced laminated kraft bituminous product conforming to ASTM C 171. Four mil polyethylene sheeting may be substituted for curing paper.
- C. Curing, Sealing, and Hardening of Interior Concrete Floors/Slabs not Scheduled to receive Finish Floor Material: All Portland cement concrete floors/slabs and aprons in buildings not scheduled to receive applied finishes such as vinyl composition floor tile, shall be cured, sealed and hardened by two applications of "Ashford Formula", manufactured by Curecrete Chemical Company, Inc., Springville, UT 84663-0551; or approved equal. Apply after wet cure is completed.

## 2.10 BONDING AGENT

- A. Bonding agent for adhering fresh concrete to old shall be Sika Armatec 110, three component, water-based epoxy resin/ Portland cement bonding agent, manufactured by Sika Corporation, Lyndhurst, NJ 07071, or approved equal.

## 2.11 EXPANSION JOINTS

- A. Expansion joints shall be 1/2 in. wide and shall be filled with preformed joint filler.
- B. Expansion joint filler shall be a preformed, non-bituminous type joint filler conforming to ASTM D 1752, Type II, Sealtight Cork Expansion Joint Filler, manufactured by W.R. Meadows, Inc., or approved equal.
  - 1. Joint filler shall be one piece for the full depth and width of the joint.
  - 2. Use of multiple pieces of lesser dimensions to make up the required depth and width of the joint will not be permitted.

## 2.12 SLEEVES

- A. Sleeves shall be galvanized steel pipe, Schedule 40.

## 2.13 MISCELLANEOUS ITEMS

- A. Bolts: Conform to ASTM A 307 or ASTM A 36 (as indicated on the Drawings), carbon steel with regular hexagon nuts conforming to ASTM A 563, and carbon steel washers conforming to ASTM F 436.
- B. Expansion bolts for anchoring into existing concrete shall conform to ASTM A 307, and shall have a self-drilling shell similar to Phillips Red Head Self-Drilling Shells, manufactured by Phillips Red Head Anchor Division of ITT, Michigan City, IN., or approved equal.
- C. Vapor Barrier: 6 mil thick reinforced polyethylene film, maximum moisture vapor permeance of 0.11 perms per ASTM E 96.

## **PART 3 – EXECUTION**

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### 3.01 SUITABILITY OF SUBGRADE

- A. Aggregate subbase to receive concrete slab-on-grade shall be inspected to ensure that material is suitable to receive concrete, including compaction. Subgrade unacceptable shall be brought to the attention of the Owner's Representative.

### 3.02 PREPARATION OF SUBGRADE

- A. Subgrade shall be compacted as required to bring the top 6 in. of subgrade material immediately below the concrete to a density of not less than 95% at optimum moisture content as determined by ASTM D 1557. Subgrade compaction shall extend for a distance of at least 1 ft. beyond edge of concrete.
  - 1. Existing subgrade material which will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to required line and grade and to replace unsuitable material removed shall be material conforming to Section 3100000 - EARTHWORK.

### 3.03 ACCEPTABILITY OF CONCRETE SURFACES

- A. Concrete structures to receive concrete topping slab shall be inspected to ensure that surface is suitable to receive concrete. Waterproofed surfaces shall be thoroughly cured and suitably protected with protection board prior to start of concrete work of this section.

### 3.04 REINFORCING

- A. Before being placed in position, reinforcing shall be thoroughly cleaned of loose mill and rust scale, dirt, ice, and other foreign material which may reduce the bond between the concrete and reinforcing. Where there is delay in placing concrete after reinforcement is in place, bars shall be reinspected and cleaned when necessary.
- B. Any bar showing cracks after bending shall be discarded.
- C. Unless otherwise indicated on the Drawings, reinforcing shall extend within 2 in. of formwork and expansion joints. Reinforcing shall continue through control joints. Adjacent sheets of fabric reinforcing shall lap 6 in.
- D. After forms have been coated with form release agent, but before concrete is placed, reinforcing steel and anchors shall be securely wired in the exact position called for, and shall

be maintained in that position until concrete is placed and compacted. Chair bars and supports shall be provided in a number and arrangement satisfactory to the Owner's Representative.

### 3.05 CONCRETE PLACEMENT

- A. Before placing concrete, forms and space to be occupied by concrete shall be thoroughly cleaned, and reinforcing steel and embedded metal shall be free from dirt, oil, mill scale, loose rust, paint, and other material which might tend to reduce bond.
- B. Existing concrete, earth, and other water-permeable material against which new concrete is to be placed shall be thoroughly damp when concrete is placed. There shall be no free water on surface.
- C. Concrete which has set or partially set before placing shall not be employed. Retempering of concrete will not be permitted.
- D. Segregation of the concrete shall be prevented during handling; should segregation occur, the concrete shall be remixed before it is placed. Concrete shall be placed in the forms in horizontal layers not over 1 to 2 ft. thick. Concrete shall not be allowed to drop freely more than 4 ft. If the free drop to the point of placement must exceed 4 ft., the Contractor shall obtain the approval of the Owner's Representative for the proposed method of depositing the concrete. The concrete shall not be required to flow over distances greater than 3 ft. in any direction in the forms or on the ground, unless otherwise permitted by the Owner's Representative.
- E. Concrete shall be thoroughly spaded, and tamped, and vibrated to secure a solid and homogeneous mass, thoroughly worked around reinforcement and into corners of forms.
  - 1. Apply vibration at point of deposit and in area of freshly placed concrete. Vibrate enough to accomplish thorough compaction and complete embedment of reinforcement and fixtures. Supplement vibration by hand spading in corners and angles of forms to prevent honeycombing.
- F. When joining fresh concrete to concrete which has attained full set, latter shall be cleaned of foreign matter, and mortar scum and laitance shall be removed by chipping and washing. Clean, roughened base surface shall be saturated with water, but shall have no free water on surface. A coat of 1:1 cement-sand grout, approximately 1/8 in. thick, shall be well scrubbed into thoroughly dampened concrete base. New concrete shall be placed immediately, before grout has dried or set.
- G. Concrete surfaces which act as a seat for structural members (other than those resting on grout) shall be troweled to an extremely flat and level surface. If necessary, such surfaces shall be ground off to achieve the required flatness and level.

### 3.06 EMBEDDED METALS

- A. Anchor bolts, anchor slots, reglets, sleeves, edge angles, and similar embedded items will be provided, delivered to the site, under other sections of the specification, for installation under this section.
- B. Where edge angles, etc., have nuts welded on to receive machine screws, the threads of the nuts shall be protected from concrete, and the concrete shall be excluded from the space to be occupied by the screw, by use of wood plugs or other effective means.

### 3.07 PIPE TO WALL PENETRATION SLEEVES

- A. Sleeves shall be accurately set to required elevation and slope.
- B. Installation shall conform to the pipe sleeve manufacturer's instructions.

### 3.08 VAPOR BARRIER

- A. Place under floor slabs on grade prior to placing reinforcing. Lap joints min. 6 in., with top lap in direction concrete will be spread. Cut to fit around projections through slab; tape around penetrations.
- B. Protect vapor barrier from rupture during reinforcing and concreting operations.

### 3.09 FINISHING VERTICAL CONCRETE

- A. Exposed vertical surfaces shall be formed to produce a "smooth form finish", as defined in ACI 301. Concrete which is exposed to view on the exterior of the finished structures shall receive a smooth rubbed finish, in accordance with ACI 301 and as follows:
  - 1. To permit satisfactory finishing, forms shall be removed from the vertical faces of the concrete as early as is possible without damaging the surface. Immediately after stripping forms, any fins or projections left by the forms shall be chipped off, and the surfaces rubbed smooth.
  - 2. Form tie holes and other voids and faults shall be patched. Voids, etc., shall be cleaned out, roughened, thoroughly wetted, coated with neat cement paste, and filled with mortar of cement and sand in the same proportions, materials, and color as used in the concrete. The surface of the patch shall be flush with the surrounding surface after finishing operations are complete. Surface shall be kept continuously damp until patches are firm enough to be rubbed without damage.
  - 3. Rubbing shall be performed while the surface is wet using a carborundum or cement sand brick, to achieve a smooth, uniform, even textured finish. Patched and chipped areas shall be blended to match as closely as possible the appearance of the rest of the surface. No cement wash or plastering will be permitted, and no mortar shall be used except as required above.
- B. Rubbed Finish: After removal of forms, patching and repairing, and while concrete is still green, spread slurry consisting of 1 part portland cement concrete and 1-1/2 part damp, loose sand by volume, over predampened surface. Apply using burlap pads or sponge rubber floats. Remove surplus materials, then rub with clean burlap. Water fog completed surfaces for 7 days min.
- C. As-Formed Finish: Remove fins by stoning, otherwise leave texture imparted by forms.
- D. Vertical surfaces of concrete which will be concealed in finished structure shall be formed to produce a "rough form finish", as defined in ACI 301.

### 3.10 FINISHING HORIZONTAL CONCRETE

- A. Concrete slabs and pads shall be screeded off and wood-floated to a smooth surface, true to line and grade, and free of hollows and bumps. Surface shall be dense, smooth, and at exact level and slope required.

- B. Horizontal surfaces of concrete which will be exposed shall be given a light broomed finish, with direction of grooves in concrete surface perpendicular to length of concrete slab or pad. After concrete has set sufficiently to prevent coarse aggregate from being torn from surface, but before it has completely set, brooms shall be drawn across it to produce a pattern of small parallel grooves. Broomed surface shall be uniform, with no smooth, unduly rough or porous spots, or other irregularities. Coarse aggregate shall not be dislodged by brooming operation.
- C. Floated Finish: Provide at slab surfaces to precede other finishes. Begin floating after concrete has been struck off, consolidated, and leveled, surface water has disappeared and surface is sufficiently hardened to support power driven float. Finish surface with impact type power driven float or hand float. Test surface with 10 ft. - 0 in. straightedge placed at minimum two different angles; correct irregularities exceeding 1/4 in. Refloat repaired areas.
- D. Trowel Finish: Provide at interior slab surfaces. Screed and float slabs to true and level surface, then trowel to dense, impervious surface, free from trowel marks, uniform in texture and appearance. Machine troweling is acceptable for surfaces to receive additional floor coverings and as preliminary finish on exposed surfaces. Hand trowel areas to be exposed in finished structure. Test surface with 10 ft. - 0 in. straightedge placed at minimum two different angles; correct irregularities exceeding 1/4 in. Refloat repaired areas.
- E. Curing, Sealing, and Hardening of Interior Concrete Floors/Slabs and Aprons not Scheduled to receive Finish Floor Material: Apply two applications of Ashford Formula to all concrete aprons and concrete floors/slabs (and equipment pads) not scheduled to receive other finishes in strict accordance with manufacturer's instructions and recommendations, including "working" material into concrete surfaces, as approved by the Owner's Representative. Provide the services of a technical representative of the sealer material to be on-site during application of sealer material.
- F. Control joints in floor as indicated on the Drawings shall be sawn by using a diamond blade concrete power saw. Joints shall be made as soon as possible after concrete is finished and when the surface is stiff enough to support the weight of workmen without damage to the slab. Saw shall cut into slab at least 1 in., but in no case less than 25% of slab depth. Cuts shall be clean and shall be straight and uniform.
- G. Where finishing is performed before end of curing period, concrete shall not be permitted to dry out, and shall be kept continuously moist from time of placing until end of curing period, or until curing membrane is applied.

### 3.11 FILLING TIE ROD AND BOLT HOLES

- A. Holes resulting from the removal of bolts or tie rods shall be solidly filled with cement grout. Holes passing entirely through concrete members shall be filled from the inside face, with a plunger-type grease gun or other device that will force the mortar through to the outside face, holding a canvas sack at the exterior surface to assure complete filling. Holes which do not pass entirely through shall be filled, using tools which will permit the opening to be packed thoroughly full. Excess mortar at the faces of filled holes shall be struck off flush, with a canvas sack.

### 3.12 CURING

- A. It is essential that concrete be kept continuously damp from time of placement until end of specified curing period. It is equally essential that water not be added to surface during floating and troweling operations, and not earlier than 24 hours after concrete placement. Between finishing operations surface shall be protected from rapid drying by a covering of waterproofing paper. Surface shall be damp when the covering is placed over it, and shall be

kept damp by means of a fog spray of water, applied as often as necessary to prevent drying, but not sooner than 24 hours after placing concrete. None of the water so applied shall be troweled or floated into surface.

- B. Concrete surfaces, not otherwise specified, shall be cured by being kept wet with clean water for a period of not less than seven days after placing. Each day the forms are left in place, and kept wet enough to prevent the opening of joints in the forms and the drying out of the concrete, will be counted as one day of curing.
- C. Concrete surfaces shall be cured by completely covering with curing paper.
  - 1. Concrete shall be completely covered with paper with seams lapped at least 2 in. and sealed with tape. Concrete surface shall not be allowed to become moistened within 24 hours of placing concrete. During curing period surface shall be checked frequently, and sprayed with water or curing compound, as applicable, as often as necessary to prevent drying, but not earlier than 24 hours after placing concrete.
  - 2. Concrete surfaces to receive paint, waterproofing, damproofing, thin-set adhesives and coatings, and similar applied materials which require bond and adhesion to concrete surfaces, shall be cured using curing paper. The use of curing compounds on these surfaces will not be permitted.
  - 3. Unless otherwise directed by the Owner's Representative, curing period shall be seven days, minimum.

### 3.13 COLD WEATHER CONCRETING

- A. Materials for concrete shall be heated when concrete is mixed, placed, or cured when the mean daily temperature is below 40oF., or is expected to fall to below 40oF., within 72 hours, and the concrete after placing shall be protected by covering, heat, or both.
- B. Details of handling and protecting of concrete during freezing weather shall be subject to the approval and direction of the Owner's Representative. Procedures shall be in accordance with provisions of ACI 306.
- C. Protect concrete from damage and reduced strength or performance due to weather extremes during mixing, placing and curing. Unless adequate protection is provided, concrete shall not be placed during rain, sleet or snow.
- D. Carefully review phasing requirements and determine scope of cold-weather concreting required.

### 3.14 HOT WEATHER CONCRETING

- A. Concrete just placed shall be protected from the direct rays of the sun and the forms and reinforcement just prior to placing shall be sprinkled with cold water. Every effort shall be made to minimize delays which will result in excessive mixing of the concrete after arrival on the job.
- B. During periods of excessively hot weather (95 degrees F., or above), ingredients in the concrete shall be cooled insofar as possible and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Concrete with a temperature above 95 degrees F, when ready for placement will not be acceptable, and will be rejected.
- C. Temperature records shall be maintained throughout the period of hot weather giving air temperature, general weather conditions (calm, windy, clear, cloudy, etc.) and relative humidity. Records shall include checks on temperature of concrete as delivered and after

placing in forms. Data should be correlated with the progress of the work so that conditions surrounding the construction of any part of the structure can be ascertained.

### 3.15 BRACING AND SUPPORTS

- A. Concrete members shall be adequately and safely supported and braced until the permanent supports and braces (by whoever supplied) are installed.

### 3.16 REMOVING FORMS AND SUPPORTS

- A. Except as otherwise specifically authorized by the Owner's Representative, forms shall not be removed until the concrete has aged for at least three days or the following number of day-degrees, whichever is greater.

<u>Location</u>	<u>Day-Degrees*</u>
Beams and Slabs	500
Walls and Vertical Surfaces	100

\* The term day-degrees represents the product of the number of days elapsed since time of concrete placement and the average daily air temperature at the surface of the concrete. For example, five days at a daily average temperature of 60 deg. F. equals 300 day-degrees.

- 1. Form removal by methods other than day-degree method will not be permitted.

### 3.17 BONDING AGENT

- A. Surface shall be clean, sound, and saturated surface dry but free of standing water. Remove dust, laitance, grease, curing compounds impregnations, waxes, and other foreign matter.
- B. Sandblast existing concrete, or use other mechanical means to achieve surface preparation required by bonding agent manufacturer prior to application of bonding agent.
- C. Apply bonding agent in strict accordance with manufacturer's printed instructions.

### 3.18 EXPANSION JOINT

- A. Expansion joint shall be 1/2 in. wide, clean, dry, and free of loose material, dirt, oil and grease, and shall be formed in the concrete to required width with preformed joint filler in place. Joint filler shall extend the full length of the expansion joint.
  - 1. Depth of filler shall extend to the full thickness of the concrete in vertical surfaces and in concealed horizontal surfaces.
  - 2. Depth of filler in exposed horizontal surfaces shall be as required to form a 1/2 in. deep sealant recess below finished surface.

### 3.19 CONTROL JOINTS

- A. Saw cut joints shall be made following finishing as soon as the concrete surface is firm enough not to be torn or damaged by the blade, and before random shrinkage cracks can form in the concrete surface.
- B. Saw cut shall be made accurately to the dimensions, line, and spacing indicated.

### 3.20 PATCHING FORMED SURFACES OF EXPOSED CONCRETE

- A. After forms have been removed, inspect concrete surfaces and patch pour joints, voids, stone pockets, other defective areas and tie holes before concrete is thoroughly dry. Chip away defective areas to depth of not less than 1 in. with edges perpendicular to surface. Wet areas to be patched and space at least 6 in. wide entirely surrounding it, to prevent absorption of water from patching mortar. Do not patch concrete in freezing weather.
- B. Apply chemical bonding agent to surface in accordance with manufacturer's printed instructions, followed immediately by patching mortar. Make patch of same proportions used for concrete except omit coarse aggregate. Add only enough water consistent with requirements for handling and placing.
- C. Thoroughly compact mortar into place and screed off; leave patch slightly higher than surrounding surface. Leave undisturbed for one to two hours to permit initial shrinkage before final finishing. Finish patch to match texture and color of adjoining surface. Completely fill tie holes left by withdrawal of rods and hole left by removal of end of ties. For holes passing entirely through wall, force mortar through with plunger type grease gun. Cure all patches.

### 3.21 PROTECTION OF CONCRETE SURFACES

- A. Concrete surfaces shall be protected from traffic or damage until surfaces have hardened sufficiently. If necessary 1/2 in. thick plywood sheets shall be used to protect the exposed surface.

**END OF SECTION**

**SECTION 260000  
ELECTRICAL  
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**SECTION 260000  
ELECTRICAL**

**PART 1 - GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Provide all labor, materials, equipment, hoisting, plant, transportation, rigging, staging, appurtenances, and services necessary and/or incidental to properly complete all electric work as indicated on Drawings, as described in Specifications or as reasonably inferred from either as being required in opinion of Owner's Representative.

1. Complete installation of all site lighting luminaires including all branch circuit wiring of luminaires and associated pole mounted ground fault receptacles.
2. Installation of branch circuit wiring within building shall be run concealed whenever possible. Circuitry run above accessible ceilings may be run in MC cable, where run exposed provide EMT conduit. All exposed conduits shall be painted to match ceilings and/or walls behind surface raceways.
3. Provide conduit sleeves through drywall and coring at block and/or concrete walls and floors. All cores shall be sealed.
4. Removal and re-installation of existing ceiling tiles and ceiling grids where necessary to facilitate the installation of new raceways. Provide new ceiling tiles and grid that are damaged as a result of this contract.

- B. Work shall include but shall not be limited to following:

1. Complete installation of CCTV cameras, wiring and terminations on site poles and slack cable coiled at headend equipment in existing Annex.
2. Conduits and raceways.
3. Outlet boxes and accessories.
4. Wire and cable.
5. Photocells.
6. Site lighting.
7. Lighting contactors.
8. Relays.
9. Time switches.
10. Certified test reports.
11. Equipment connections.

12. Existing electrical equipment and systems.
  13. Handholes.
  14. Removal and replacement of existing ceiling tiles.
  15. Provide new ceiling tiles to replace damaged tiles as a result of this project.
  16. Replace damaged ceiling grids.
  17. Grounding.
  18. All staging, planking and scaffolding, hoisting and rigging required for Electrical Work.
  19. Painting of exposed raceways.
  20. Testing.
  21. Operating and maintenance instructions and manuals.
  22. Record Drawings.
- C. As used in this Section, "provide" means "furnish and install." "Install" means "put in place and connect."
- D. Perform work and provide material and equipment as shown on Drawings and as specified in this Section. Coordinate work of this Section with work of other Sections to provide complete and functional installation.
- E. Where Drawings or Specifications indicate discrepancies, or are unclear, advise Owner's Representative in writing before Award of Contract. Otherwise Owner's Representative's interpretation of Contract Documents shall be final. No additional compensation will be approved because of discrepancies or lack of clarity thus unresolved.
- F. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.
- G. Where Drawings or Specifications do not agree with manufacturer's recommendations, or with applicable codes and standards, alert Owner's Representative in writing before installation. Otherwise, make necessary changes in installation as required by Owner's Representative within Contract Price.
- H. Drawings are diagrammatic and indicate general arrangement of systems and work included in Contract. It is not intended that every junction box, offset, fitting or component be specified or shown on Drawings; however, Contract Documents require provision of all components and materials necessary for complete and operational Electrical installation, whether or not indicated or specified.
- I. Prior to submitting bid, visit site and identify existing conditions and difficulties that will affect work of this Section. Renovation work requires careful site examination before bidding. No compensation will be granted for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observers.
- J. Prior to commencing work of this Section, examine site and conditions under which work will be performed. Determine exact locations of existing items shown diagrammatically on Drawings. Report in writing to Owner's Representative conditions that might adversely

affect work. Commencement of work shall constitute complete acceptance of existing conditions and preparatory work.

- K. Do not scale Drawings. Scale indicated on Drawings is for establishing reference points only. Actual field conditions shall govern all dimensions.
- L. Provide items referred to in singular number in Contract Documents in quantities necessary to complete Work of this Section.

1.03 ITEMS TO BE FURNISHED ONLY

- A. Furnish following items for installation under other Sections:
  - 1. Precast concrete bases for poles, will be furnished under this Section, but installed under Earthwork. Fill and gravel base shall be furnished and installed under Earthwork, as required, for proper setting and bearing of these items.
  - 2. Anchor bolts for pre-cast for exterior lighting standards: Concrete. Furnish pole base templates, for determining locations of anchor bolts.

1.04 RELATED WORK

- A. Excavation, backfill and resurfacing required for underground electrical systems.
- B. Establishment of finished grades for site lighting.
- C. Concrete work required for sidewalk work.

1.05 SUBMITTALS

- A. Submit complete Shop Drawings in accordance with SECTION 013300 – Submittal Procedures.
- B. Submittals shall include, but not necessarily be limited to, following items:
  - 1. Handholes.
  - 2. Conduits and raceways.
  - 3. Wire and cable, including CAT 6 and fiber optic cable.
  - 4. CCTV cameras.
  - 5. Photocells.
  - 6. Site lighting luminaires.
  - 7. Relays.
  - 8. Time switches.
  - 9. Certified test reports.
- C. Intent of Shop Drawings and Product Data review is to check for capacity, rating and certain construction features. Ensure that work meets requirements of Contract Documents regarding information that pertains to fabrication processes or means, methods, techniques, sequences and procedures of construction, and for coordination of work of this and other Sections.
- D. Perform work in accordance with submittals marked "Reviewed" to extent that they agree with Contract Documents. Submittal review shall not diminish responsibility under this

Contract for dimensional coordination, quantities, installation, wiring, supports, access, service and errors, nor for deviations from requirements of Contract Documents. Noting errors while overlooking others will not excuse proceeding in error. Requirements of Contract Documents are not limited, waived, nor superceded by Shop Drawing review.

- E. Submittals and samples will be reviewed with reasonable promptness and will be stamped indicating appropriate action as follows:
1. "REVIEWED" means that fabrication, manufacture, or construction may proceed providing submittal complies with Contract Documents.
  2. "REVIEWED WITH COMMENTS" means that fabrication, manufacture, or construction may proceed providing submittal complies with Engineer's notations and Contract Documents. If, for any reason, notations cannot be complied with, resubmit as described for submittals stamped "RESUBMIT."
  3. "RESUBMIT" means that submittal does not comply with Contract Documents and that fabrication, manufacture, or construction shall not proceed. Resubmit in accordance with requirements of Contract Documents.
- F. If manufacturer changes his product after system submittal has been approved, submit new system in its entirety for approval.

#### 1.06 SAMPLES

- A. Submit all samples requested by Owner's Representative in accordance with DIVISION 1.

#### 1.07 RECORD DRAWINGS

- A. Refer to General Conditions (DIVISION 1) for Record Drawing requirements and use.

#### 1.08 CODES, PERMITS, AND STANDARDS

- A. Installation shall comply with electrical code, latest revisions, and prevailing local, federal and state regulations.
- B. Material and equipment shall be UL listed where standard has been established.
- C. Manufacturer names and nomenclature facilitate description of certain materials and equipment and establish type, quality and function.
- D. Unless otherwise specified, furnish, install and test work in accordance with latest editions of applicable publications and standards of following:
1. ANSI: American National Standards Institute
  2. ASTM: American Society for Testing and Materials
  3. ICEA: Insulated Cable Engineers Association
  4. IBC: International Building Code
  5. IEEE: Institute of Electrical and Electronic Engineers
  6. MSBC: Massachusetts State Building Code

- 7. MEC: Massachusetts Electrical Code
  - 8. NEMA: National Electrical Manufacturers Association
  - 9. UL: Underwriters Laboratories, Inc.
- E. Reference made to codes and standards shall be interpreted as minimum requirements. Where referenced codes and/or standards conflict, the more stringent shall apply. Owner's Representative may relax this requirement where such relaxation does not violate ruling of authorities that have jurisdiction. Approval for such relaxation shall be obtained in writing. Perform work in excess of codes and standards as indicated by Drawings or Specifications.
- F. Obtain necessary permits, licenses, or certificates of approval required. Pay fees required by and conforming to local and state laws and regulations. At conclusion of work, furnish certificates of inspection to Owner from authorities having jurisdiction.
- G. Perform tests required by Specifications, Owner's Representative's instructions, laws, ordinances or public authorities, approvals, and give Owner's Representative timely notice. Notify Owner's Representative of dates for inspection by other authorities.
- 1.09 TEMPORARY FACILITIES
- A. Refer to requirements of DIVISION 1 regarding temporary facilities.
- 1.10 SUBSTITUTION OF MATERIALS
- A. Deviations from Contract Documents and substitution of materials and equipment for those specified shall be requested individually and in writing. Submit proposed substitution prior to purchase and/or fabrication and within 30 days after Award of Contract.
- B. Submit comprehensive descriptive and technical data to establish quality. Do not submit for substitution material or equipment unless identical material or equipment has been operated successfully for at least three consecutive years.
- C. When substitution is permitted, coordinate fully with related changes to work of other Sections. Ensure that related changes necessary for coordination are made within Contract Price.
- D. Assume full responsibility for safety, operation and performance of altered system.
- E. Proposed substitutions shall be subject to approval by Owner's Representative.
- 1.11 GUARANTEE AND WARRANTIES
- A. In addition to specific guarantee requirements of General Conditions and Supplementary General Conditions obtain in Owner's name written equipment and material warranties offered in manufacturer's published product data without exclusion or limitation.
- B. Guarantee Work of this Section in writing for not less than one year from date of Final Notice of Acceptance. Repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Owner's Representative's

satisfaction and correct damage caused in making necessary repairs and replacements under guarantee within Contract Price.

- C. Replace material or equipment that requires excessive service during guarantee period, as defined and as directed by Owner's Representative.
- D. Submit guarantee to Owner's Representative before final payment.

1.12 QUALITY ASSURANCE

- A. Experience: Manufactured items shall have been installed and used, without modification, renovation or repair, on other projects for not less than three years prior to the date of bid opening for this Project.
- B. Experience List: Submit a list of installations where the following items have been in operation for not less than one year. Include project name and address, name and telephone number of owner's representative.

## **PART 2 - PRODUCTS**

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### 2.01 GENERAL

- A. Provide materials and equipment necessary to make installation complete in every detail under this Contract whether or not specifically shown on Drawings or specified herein. Materials and equipment shall be new.
- B. Where materials, equipment, apparatus, or other products are specified by manufacturer, brand name, type or catalogue number, such designation is only to establish standards of performance, quality, type and style.

### 2.02 PULL BOXES, WIREWAYS AND CHANNELS

- A. Pull boxes shall be code gauge galvanized stainless steel with screw covers to match. Pull boxes and wireways shall be as shown on Drawings and/or as required by MEC and/or job conditions, with steel barriers separating systems.
- B. Wireways shall be code gauge galvanized stainless steel, manufactured standard sections and fittings, with combination hinged and screw covers.
- C. Steel channel supports shall be minimum 1-5/8 inch mild strip stainless steel with minimum 12 gauge (0.105 inch) wall thickness, Unistrut P1000, Kindorf, Husky Products, or equal. Loadings shall be per manufacturer's recommendations.

### 2.03 RACEWAYS

- A. Rigid steel conduit shall be hot-dipped galvanized steel conforming to ANSI C80.1 and UL 6. Conduit shall be as manufactured by Allied Tube and Conduit Co., Wheatland Tube Co., LTV Steel Tubular Co., or equal.
- B. Electric metallic tubing shall be hot-dipped galvanized steel conforming to ANSI C80.3 and UL 797. Tubing shall be as manufactured by Pyle National, Allied Tube and Conduit Corp., Wheatland Tube Company, or equal.
- C. Plastic conduit shall be Schedule 40 PVC 90°C conforming to NEMA Standard TC2. Plastic conduit shall be as manufactured by Carlon Electrical Products Co., Allied Tube and Conduit Company, Triangle Company or equal.
- D. Flexible metal conduit shall be galvanized steel with separate copper grounding conductor. Liquid-tight flexible metal conduit shall be similar, but with extruded moisture and oil-proof outer jacket of polyvinyl chloride plastic.
- E. Intermediate metal conduit fittings, couplings and connectors shall be threaded and galvanized or cadmium plated.
- F. Couplings and connectors for electric metallic tubing shall be galvanized steel set-screw.
- G. Stainless Steel support rods or support bolts for conduits shall be 1/8 inch diameter for each inch or fraction thereof of diameter of conduit size, but no rod or bolt shall be less than 1/4 inch in diameter. Support rods for steel channel shall not be less than 5/8 inch in diameter.
- H. Waterproof conduit seals for rigid steel conduit entry shall be comprised of malleable iron seal with gland assembly and adjustable pressure rings and neoprene sealing grommets, OZ Gedney or equal, type WSK for poured concrete walls and type FSK for floors. For

cored walls and floors, provide PVC coated steel discs, neoprene sealing ring and stainless steel screws and washers, OZ Gedney type CSML or equal.

#### 2.04 WIRE AND CABLE

- A. Provide wire and cables and associated connectors, splices, and terminations for wiring systems rated 600V and less. Wire and cable shall be as manufactured by American Insulated Wire Corporation, General Cable Corporation, Southwire Company, Senator Wire and Cable Company, or Okonite.
- B. Conductor material shall be soft drawn copper complying with NEMA WC 5. Wire size #12 AWG and larger shall be Class B stranded. Wire size smaller than #12 shall be solid.
- C. Single conductor insulation shall be 600V type THHN-THWN, THW, XHHW, UF, SO or USE complying with NEMA WC 5 or WC 7.
- D. Provide conductors and splices of size, ampacity rating, material, type, and class for application and service indicated. Manufacturers shall be AFC Cable Systems, AMP Incorporated, Hubbell, OZ Gedney or 3M Company.

#### 2.05 WIRING DEVICES

- A. Digital Time Switches:
  - 1. Provide SPDT eight channel astronomic dual voltage 120/277V digital time switch capable of 128 time based events, including holiday schedules and -20 degree F to 140 degree F operating range. NSi Industries (Tork) Catalog #ELC78.

#### 2.06 NAMEPLATES

- A. Nameplates shall be two-ply, 1/16 inch thick, black phenolic material with 1/4 inch high white recessed letters and two mounting holes. Nameplates shall be securely attached to equipment with galvanized screws or rivets. Adhesives or cements shall not be permitted.
- B. Nameplates shown on Drawings or specified under "Wiring Device Plates" paragraph as engraved, shall be engraved on device plates and filled in black.
- C. Nameplates shall be as manufactured by Ezra Leboff Company of Brighton, MA or equal.

#### 2.07 OUTLET BOXES AND ACCESSORIES

- A. Outlet shall be suitable cast aluminum or cast iron, Crouse-Hinds Company, Appleton, or OZ Gedney, with threaded conduit hubs.

#### 2.08 LUMINAIRES

- A. Provide UL listed luminaires, equipment and components wired and assembled where shown on Drawings, as listed in Luminaire Schedule and as specified.
- B. LED Luminaires:
  - 1. LED Light Characteristics and Photometrics:
    - a. LED's used in LED luminaires shall be high brightness and of proven quality from established and reputable LED manufacturers.

- b. Manufacturer shall utilize advanced production LED binning process such as Optibin® from Philips Color Kinetics or equal to deliver common and repeatable color point to maintain color consistency from luminaire to luminaire and project to project over time, while ensuring reliable supply of LED's from supplier.
- c. Manufacturer shall provide optical performance, polar diagrams, and photometric data in various formats including IES file format in accordance with IES LM-79-08. Photometric data shall be based on test results from independent NIST traceable testing lab. IES data must be available and downloadable from manufacturer's Web Site.
- d. Luminaire correlated color temperature (CCT) tolerance shall exceed ANSI C78.377-2008 standard.

### **PART 3 - EXECUTION**

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#### **3.01 GENERAL**

- A. Unless specifically noted or shown otherwise, install all equipment and material specified in this Section or shown on Drawings whether or not specifically itemized herein. PART 3 covers particular installation methods and requirements peculiar to certain items and classes of material and equipment.

#### **3.02 RACEWAY WORK**

- A. Install wire and cable in approved raceways as specified and as approved by authorities having jurisdiction. Raceways shall be run concealed except as indicated on Drawings.
- B. Adapt plastic conduit to intermediate metal conduit sweeps prior to turning up from underground. All sweeps shall be rigid steel.
- C. Minimum size plastic conduit shall be 3/4 inch trade size.
- D. Clean and dry all conduit before installation of conductors. Do not pull wires into conduit system (or install cables) until are cleaned. Plug conduit ends as rejoined. Lubricants or cleaning agents which might have deleterious effect on conductor coverings shall not be used for drawing conductors into raceways.
- E. Intermediate metal conduit ends shall be cut square, threaded and reamed to remove burrs and sharp edges. Field threads shall be of same type and same effective length as factory-cut threads. Turns in exposed conduit runs shall be made by use of factory-made bends, or field-made bends equivalent in radius and consistency with factory-made bends, as approved. In event of multiplicity of conduits making same turn, provide conduits or steel junction box with removable steel cover. Route conduits so as not to interfere with operation or maintenance of any equipment. Offsets and bends shall be made in concealed conduits as required by job conditions. Perform work in neat and workmanlike manner, as approved by Owner's Representative. Steel supports or racks shall be galvanized steel channel and fittings, Unistrut, Kindorf, Husky Products Company, or equal.
- F. Install conduit to keep exposed threads to an absolute minimum.
- G. Provide minimum 3/16 inch diameter twisted nylon fish cord in all empty raceways. Provide tag on each end indicating location of other end. Fish cord shall have minimum of 200 pounds tensile strength.
- H. Conduit bodies shall only be used for wire sizes No. 2 AWG and smaller.

#### **3.03 WIRING METHODS**

- A. Branch circuit conductors for site lighting circuits shall be XHHW-2 or THW run in raceways.
- B. Provide color coding for secondary service, feeders and branch circuits as follows:
  - 1. 208/120V, three phase, four wire, wye

<u>PHASE</u>	<u>COLOR</u>
A	BLACK
B	RED
C	BLUE

<u>PHASE</u>	<u>COLOR</u>
NEUTRAL	WHITE
EQUIPMENT GROUND	GREEN

2. Make connections to terminals from left to right arranged Phase A, B, and C.
  3. Color code wiring for signal systems differently from power wiring described above. White and green colored insulation shall only be used with color tracer. Provide one of following methods for single or multi-conductor cables:
    - a. Spiral or longitudinal color stripe (tracer), running full length of cable.
    - b. Printed numbers stamped every 12 inches on cable insulation.
    - c. Numbered wire markers, Brady or equal, at junction boxes and termination points.
  4. Provide same color coding for switch legs as corresponding phase conductor.
  5. Provide colored plastic tape of specified color code identification for large size conductors available only in black. Wrap tape three complete turns around conductor at ends and at connections and splices.
- C. Phase wires shall be connected to phase supply mains in proper rotation to assure balanced condition on panel. Circuit numbers assigned on Drawings are for convenience only.
- D. Splices and Terminations:
1. Make splices and terminations equivalent electrically and mechanically to conductor insulation.
  2. Make splices in branch circuit wiring with solderless, screw-on connectors Ideal, Scotchlok, T&B or equal, rated 600 V, of size and type required by manufacturer's recommendation, with temperature ratings equal to those of cable insulation. Insulate splices with integral covers or with plastic, rubber, or friction tape, Permacel, or equal, to maintain integrity of cable insulation.
  3. Make splices and terminations to conductors #8 and larger with corrosion-resistant, high conductivity, pressure indent, hex screw or bolt clamp connectors, with or without tongues, designed specifically for intended service. Connectors for cables 250 kcmil and larger shall have two clamping elements or compression indents. Terminals for bus connections shall have two bolt holes. Split bolt connectors, Burndy or equal, shall be acceptable for all splices of conductors #8 and larger.
  4. Make splices at motor junction boxes with pressure indent connectors or split-bolt connectors as specified herein.
  5. Provide standard bolt-on lugs with allen or cap screws to attach copper wire and cable to disconnect switches and other electrical equipment.
- E. Branch circuit wiring may not be graphically shown on Drawings and may be shown by circuit numbers beside luminaires, devices and equipment. Provide complete wiring system whether or not shown graphically. Wiring is shown by conduit runs on Drawings

where specific routing is required, or for other special reasons. Only rooms with multiple switching have "switch control letters" assigned.

- F. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- G. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- H. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- I. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- J. Install conductors at each outlet with at least 6 inches of slack.
- K. No more than three phase conductors shall be run in same conduit except where shown on Drawings.

#### 3.04 LUMINAIRES

- A. Provide complete wired and assembled installation of all luminaires, equipment and components necessary and as shown on Drawings, and specified herein.

#### 3.05 COOPERATION AND WORK PROGRESS

- A. Perform work so that progress of project, including work of other Sections is not delayed.
- B. Coordinate work of this Section with work of other Sections to complete work as soon as conditions permit and minimize interruptions of building functions. Assume additional costs incurred due to lack of or improper coordination with work of other Sections.
- C. Remove waste material promptly from premises. Store material and equipment in dry location, in neat and orderly fashion. Ensure adequate security for electrical material and equipment stored at job.
- D. Obtain detailed information from manufacturer of equipment provided under this Section as to proper methods of installation.
- E. Provide necessary safeguards for protection of life and property of Owner, workers, staff and public.
- F. Coordinate exact mounting arrangement and location of equipment shown on Drawings.
- G. Coordinate delivery of electrical equipment to project prior to installation. Such equipment stored for extended period of time prior to installation may be subject to rejection by Owner's Representative.

#### 3.06 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Refer to requirements of DIVISION 1 for specific instructions relating to operating and maintenance instructions.

- B. At completion of work and at time acceptable to Owner's Representative, furnish operation instruction brochures and parts manuals, keys to all systems, warranties, and instruct Owner's representative as to arrangement, locations and operation of equipment and systems. Furnish instruction brochures and parts manuals in duplicate, as required by Owner's Representative, that describe operation and suggested maintenance program for all systems and equipment. Provide spare parts list and name, address and telephone number of manufacturer's representative and service company for each system or equipment category.
- C. Furnish copies of final amended submittals and catalog data sheets of electrical materials and equipment, with wattage and type lamp of each lighting fixture clearly shown. Submittals shall reflect any revisions or changes as result of review process.

### 3.07 SLEEVING AND FIRESTOPPING

- A. Provide intermediate metal conduit or rigid steel conduit sleeves for all cores.
- B. Firestop all penetrations made in fire rated walls or floors with UL approved materials to prevent passage of fire and smoke and maintain original fire rating of floors or walls.
- C. Provide acoustic sealer at all sleeves not in fire rated walls.

### 3.08 SPECIAL REQUIREMENTS

- A. Bundle wiring passing through pull boxes and panelboards in neat and orderly manner with plastic cable ties. Cable ties shall be Ty-Raps as manufactured by Thomas & Betts, Holub Industries, Inc., Quick-Wrap, Burndy Unirap, or equal.
- B. Provide inserts, hangers, anchors and steel supports required for installation of electrical equipment.
- C. Where steel support channels are cut or unprotected steel is exposed, apply two coats of aluminum, zinc chromate or other approved rust preventive paint to bare surfaces after proper cleaning.
- D. Provide miscellaneous hardware and support accessories, including support rods, nuts, bolts, screws, and other such items, with galvanized or cadmium plated finish, or other approved rust inhibiting coatings.
- E. Unload electrical equipment and materials delivered to site. Pay costs for rigging, hoisting, lowering and moving electrical equipment on site, in building or on roof. During construction provide additional protection against moisture, dust accumulation and physical damage of electrical equipment. Provide temporary heaters within units, as approved to evaporate excessive moisture and provide ventilation as required.
- F. All equipment shall be cleaned. Equipment with damage to painted finish shall be repaired to satisfaction of Owner's Representative.
- G. Provide revised typed directories in existing panelboards.

### 3.09 GROUNDING

- A. Provide complete grounding system in conformance with Massachusetts Electrical Code and any special rules which may govern such installation. Seal threads of feeder conduits to maintain conduit equipment grounding conductivity. Make joints of conduits mechanically tight.

- B. Provide separate green insulated equipment grounding conductor in branch circuits.
  - C. Connect grounding pole of receptacle devices to circuit equipment grounding conductor. Bond grounding conductor at outlet boxes, cabinets, panelboards and equipment to form continuous equipment ground of noncurrent-carrying electrically conductive parts.
- 3.10 EQUIPMENT CONNECTIONS
- A. Make final connections to all equipment.
- 3.11 CORE DRILLING
- A. Provide core drilling required for installation of Electrical systems. Carry all costs for core drilling. Locate and coordinate all required openings. Do not disturb existing systems. Thoroughly investigate existing conditions in vicinity of required opening prior to coring. Be responsible for damages to building and its systems from coring operations. Disturbances from coring shall be kept to minimum.
- 3.12 CUTTING AND PATCHING
- A. Cutting and patching required for Electrical Work shall be by others.
  - B. Give notification in advance to other trades of openings required for Electrical Work. Furnish accurate details of location and size. When this requirement is not met, bear cost of cutting and patching for work under this Section.
- 3.13 EXISTING ELECTRICAL EQUIPMENT AND SYSTEMS
- A. Drawing notes refer to existing and new electrical materials and equipment. Existing electrical equipment and materials noted to remain shall be left complete and operational.
  - B. Reuse designated portions of existing equipment as specifically shown on Drawings. Disconnect, resupply and reconnect equipment as shown on Drawings.
  - C. Protect designated equipment from damage during construction.
- 3.14 EXISTING SERVICES
- A. Do not interrupt existing services without Owner's and Owner's Representative's approval.
  - B. Schedule interruptions to electric service, feeders, subfeeders, branch circuits and electrical equipment and systems as directed by Owner and to minimize impact on Owner's operations. Include costs for overtime hours to perform such interruptions, connections and reconnections in bid. Submit proposed methods for minimizing interruption, and request for interruption in writing to Owner's Representative.
- 3.15 TESTING AND INSPECTION
- A. Test and inspect work of this Section as required by Contract Documents, codes, standards and authorities that have jurisdiction, to satisfaction of Owner's Representative. Tests specified in this Section shall be construed as minimum requirements. Notify Owner's Representative and Authorities at least two working days prior to testing.
  - B. Furnish Owner's Representative with proof of megger tests of all branch circuits and feeders.

- C. Furnish Owner's Representative with certificates of testing other than manufacturer of equipment, and inspection of electrical systems by independent testing company, indicating approval of Authorities having jurisdiction, and conformance to Specifications. Testing company shall perform all testing in accordance with National Electrical Testing Association (NETA) and test results shall be submitted on NETA forms. Test results shall indicate recommended test values as well as recommended action for below average test results. Testing data shall be certified by Registered Professional Engineer.
- D. Perform all required adjustments and settings. Verify and correct deficiencies as necessary including voltages, tap settings, trip settings and phasing of equipment from distribution system to point of use. Voltage settings shall be tested and adjusted as necessary at locations of distribution system, when building is complete and operational.
- E. Furnish necessary testing equipment.
- F. Failure or defects in workmanship or materials revealed by tests shall be replaced and subsequently retested to satisfaction of Owner's Representative.
- G. Remove and replace any transformer or ballast found to have noise output exceeding specified level of identical devices.
- H. Owner will not be responsible for material and equipment prior to testing and acceptance.
- I. Luminaires:
  - 1. Test luminaires with specified lamps in place.
  - 2. Lamps shall not be operated, prior to final inspection by Owner's Representative, except for testing.
  - 3. Replace lamps that fail within 90 days after final acceptance at no additional cost.
- J. Lighting Controls:
  - 1. Demonstrate in presence of Owner's Representative and owner the proper operation of lighting controls.
- K. Receptacle Polarity and GFCI Test:
  - 1. Receptacle polarity connections shall be tested with appropriate testing device after energization.
  - 2. Test each GFCI by plugging test lamp into GFCI and pushing test button to verify 120V operation. Push reset button to verify lamp turns off. Replace GFCI and retest if above is not observed.

END OF SECTION 260000

**SECTION 3100000**  
**EARTHWORK**

**PART 1 - GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Provide labor, materials, equipment, services and transportation to complete work.
1. Excavate materials, including top soil, overburden soil, boulders, abandoned utilities, existing and previous site improvements, pavements, curbs, and other materials to the minimum subgrade elevations to construct site improvements shown on the Drawings. Segregate debris/rubble from soils and segregate top soils from overburden soils.
  2. Prepare, grade, shape, compact and protect subgrades, backfills, and ground surfaces as shown on the Drawings, described herein and as necessary to complete the work.
  3. Place geotextiles and other protections, including mud mats.
  4. Dewater to enable construction of site improvements, including backfilling, in-the-dry.
  5. Furnish materials from approved off-site source(s) as required.
  6. Provide, place, moisture condition, and compact backfill materials as specified herein to construct the site improvements shown on the Drawings.
  7. Segregate, handle, stockpile, re-handle, manage, process and reuse suitable excavated materials as specified herein by the Owner's Representative.
  8. Provide protections from water, freezing temperatures and other disturbances to subgrades and completed works.
  9. Preserve and protect existing and new site improvements during the course of the Work.
  10. Provide adequate dust control and maintain adjacent streets and sidewalks in a clean and unencumbered state.

1.03 DEFINITIONS AND REFERENCE STANDARDS

- A. Site Improvements: When used in the context of "protecting adjacent existing site improvements" shall include, but not be limited to, buildings, utilities, pavements, roadways, slabs, sidewalks, curbs, decks, foundations, subgrades, fences, shrubs, vegetation, previously placed fills, and all other improvements and features that are outside the limits of the Work, or those elements within the limits of the Work that are to remain.

- B. Subgrade Elevation or Level: The vertical excavation level and slopes indicated on the Drawings to which the excavations shall be conducted.
  - C. ASTM: Specifications of the American Society for Testing and Materials
  - D. AWS: Standard Code for Welding in Building Construction (American Welding Society)
  - E. AASHTO: American Association of State Highway and Transportation Officials
  - F. ACI: American Concrete Institute
  - G. PCI: Prestressed Concrete Institute
  - H. NCMA: National Concrete Masonry Association
  - I. Code: Current Edition of Massachusetts State Building Code
  - J. USEPA: United States Environmental Protection Agency
  - K. MADEP: Massachusetts Department of Environmental Protection
  - L. OSHA: Occupational Health and Safety Administration
  - M. MCP: Massachusetts Contingency Plan
- 1.04 RELATED SECTIONS
- A. Section 033000 – Site Cast in Place Concrete
  - B. Section 260000 – Site Electrical
  - C. Section 329200 – Seeded Lawns
- 1.05 PROJECT CONDITIONS
- A. Prior to submitting a bid, the Contractor shall review and understand all information made available to the Contractor as provided by the Owner. The Contractor may choose to conduct exploratory test pit investigations for its own information at no additional cost to the Owner.
- 1.06 QUALITY CONTROL
- A. The Owner's Representative shall observe the Contractor's earthwork activities, including excavation, dewatering, subgrade preparation and protection, backfilling and compacting. The Contractor shall provide not less than 48-hour advance notice to the Owner's Representative so that the Owner's Representative can be present to observe and test the Work.
  - B. The Owner's Representative will conduct field and laboratory testing to confirm compliance with the requirements of this Section. Field and laboratory testing will be conducted in general conformance with ASTM or other applicable reference standards. The Contractor shall cooperate with the Owner's Representative in all respects to facilitate any testing or observations.

- C. The presence of the Owner's Representative shall not relieve the Contractor of its responsibility to perform the Work in accordance with the Contract Documents, nor shall it be construed to relieve the Contractor from full responsibility for the means and methods of construction, protection of site improvements against damage, and for safety on the construction site.
- D. The Contractor shall adhere to the applicable requirements of the Standard Specifications, OSHA Standards, and to all other applicable ordinances, codes, statutory rules, and regulations of federal, state, and local authorities having jurisdiction over the Work of this Section and other applicable Sections.
- E. The Contractor shall improve, or remove and replace Work not in conformance with the specified requirements, or which becomes disturbed or unsuitable. All costs related to nonconforming Work or materials shall be the responsibility of the Contractor.
- F. The Contractor shall obtain and pay for all permits required to haul and dispose of excavated materials, and any other permits or licenses required to complete the work of this Section. The Contractor shall contact DIGSAFE prior to any excavations.
- G. Materials placed and/or compacted which do not conform to project specifications for the area, shall be removed and replaced with suitable material when directed by the Owner or the Owner's Representative at no additional cost to the Owner.

#### 1.07 SUBMITTALS

- A. Submittals: in accordance with Section 013300 – Submittal Procedures.
- B. General
  - 1. Unless otherwise specified, the Contractor shall forward submittals to the Owner's Representative a minimum of three weeks prior to any planned work related to the Contractor's submittals.
  - 2. The time period(s) for submittals are the minimum required by the Owner's Representative to review, comment, and respond to the Contractor. The Owner's Representative may require resubmission(s) for various reasons. The Contractor is responsible for scheduling specified submittals and re-submittals so as to prevent delays in the work.
  - 3. The Contractor's submittals shall be reviewed by the Owner's Representative prior to conducting any work.
  - 4. Unless indicated otherwise herein or approved by the Owner's Representative, the Contractor's submittals shall be prepared and stamped by a Professional Owner's Representative registered in the Commonwealth of Massachusetts, retained by the Contractor.
  - 5. Review of the Contractor's submittals by the Owner's Representative does not relieve the Contractor of the responsibility for the adequacy, safety, and performance of the Work.
- C. Excavation Plan: A detailed narrative and drawings (plans and elevations at a scale of 1 in. = 10 feet) describing the schedule, sequence, and procedures for excavation, subgrade preparation,

foundation construction, cold weather subgrade protection, backfilling, dewatering, soil handling, stockpiling, and other related activities.

D. Backfill Materials and Equipment

1. Proposed types and sources of fill and backfill materials. For each type of soil to be utilized as fill or backfill, the Contractor shall deliver two 50-lb bag samples from each borrow source or supplier to the Owner's Representative's laboratory for review and laboratory testing. Do not import material to the site unless accepted by the Owner's Representative. With each sample provide the following documentation:
  - a. Location of borrow source site, including name of the owner or facility name with contact phone number, street address, city, and state.
  - b. Present and past usage of the source site and material.
  - c. Existing report(s) associated with an assessment of the source site as relates to the presence of oil or hazardous materials.
2. If the materials are not from a commercial borrow pit, not naturally occurring (i.e., are processed or otherwise manmade), and/or are suspected of containing oil and/or hazardous materials based on the Owner's Representative's review of the submitted data described above, the Contractor may be required to submit the below-listed chemical test data on the material if requested by the Owner or Owner's Representative. The data shall be for samples obtained, transported and tested in a manner acceptable to the Owner's Representative. The cost of any required testing shall be borne by the Contractor. The Owner's Representative will review the data and determine its acceptability for use on site. All sampling of soils for chemical testing shall be performed by a person experienced in sample collection and either:
  - 1) a Professional Engineer or Licensed Site Professional registered in the Commonwealth of Massachusetts,
  - 2) a Professional Geologist registered in the Commonwealth of Massachusetts,
  - 3) a certified groundwater of environmental professional, or
  - 4) an authorized representative of the one of the persons listed above.Samples of each material shall be submitted to a DEP-certified laboratory.
  - a. Total Petroleum Hydrocarbons (EPA Method 9071/418.1) every 150 cy.
  - b. Extractable and Volatile Petroleum Hydrocarbons every 150 cy.
  - c. Volatile Organic Compounds (EPA Method 8260) every 250 cy.
  - d. PCB and Pesticides (EPA Method 8080) every 250 cy.
  - e. Thirteen Priority Pollutant Metals (EPA Method 6000-7000 series) every 250 cy.
  - f. Acid-Base Neutrals (EPA Method 8270) every 300 cy.
  - g. TCLP (for a particular parameter) if the measured concentration for that particular parameter exceeds twenty times the RCRA Hazardous Waste TCLP Regulatory criteria.
3. Details of proposed compaction equipment, including descriptions, product literature, specifications and ratings.

## **PART 2 - PRODUCTS**

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### 2.01 MATERIALS

- A. Granular Fill: shall consist of clean, natural, aggregate sand and gravel material free of organic material, loam, trash, snow, ice, frozen soil, or other deleterious material well graded within the following limits:

Sieve Size (ASTM D422)	Percent Passing by Weight
3 in.	100
No. 4	30 – 90
No. 40	10 – 50
No. 200	0 – 8

Granular Fill shall be used below slabs, foundations, sidewalks, and at other locations shown on the Drawings or indicated in the Specifications.

- B. Common Fill: Common Fill imported to the site shall consist of well-graded, mineral sandy or gravelly soil, predominantly free from organic matter, plastic, metal, wood, cinders, asphalt, brick, concrete, trash, ice, snow, debris, other deleterious materials, and weak, compressible materials, and shall have the characteristic that it can be readily placed and compacted. Common Fill shall not contain particles larger than 6 in. in maximum dimension and shall have a maximum of 80 percent passing the No. 40 sieve and a maximum of 30 percent passing the No. 200 sieve. On-site soils meeting the above criteria can generally be used as Common Fill at locations by the Owner's Representative.
- C. Gravel Borrow: shall conform to the requirements of item M1.03.0 Types a, b, and c of the MHD Standard Specifications for Highways and Bridges, dated 1988. Gravel Borrow Type b shall be used as subbase material below pavements. Gravel Borrow of the type indicated shall also be used at the locations shown on the Drawings or indicated in the Specifications.
- D. Dense-Graded Crushed Stone: shall conform to the requirements of item M2.01.7 of the MHD Standard Specifications for Highways and Bridges, dated 1988, Dense-graded crushed stone shall be used at the locations shown on the Drawings or indicated in the Specifications.

## **PART 3 - EXECUTION**

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### 3.01 GENERAL REQUIREMENTS

- A. Examine the site and all work prepared by others and report to the Owner's Representative in writing any conditions detrimental to the proper and timely completion of the Work of this Section. Do not proceed with the Work until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Prevent erosion at the site at all times.
- C. Stockpile materials on-site at locations that are acceptable to the Owner and Owner's Representative and that will not interfere with the progress of the work and will not damage existing structures and new improvements. Re-handling, if required, shall be the responsibility of the Contractor at no additional expense to the Owner.

D. Unfavorable Weather

1. Freezing and Wet Weather

- a. Backfill materials and concrete shall not be placed on snow, ice, or frozen subgrades.
- b. Backfill materials and concrete shall not be frozen when placed or be allowed to freeze prior to or after compaction or placement. Backfill materials and concrete shall be covered with insulating tarps or heated during freezing weather.
- c. At the end of each day, the last lift of backfill or exposed excavation, after required compaction, shall be rolled by a smooth-wheeled roller to eliminate ridges of uncompacted soil and minimize potential infiltration of precipitation.
- d. Soil bearing surfaces below soil supported slabs and foundations shall be protected against freezing, before and after concreting. Frost protection shall be provided in a manner acceptable to the Owner's Representative at all times including as soon as possible after foundations or structures are constructed.
- e. Following rainfall events, snowmelt or other wet weather, fill material placement, spreading, rolling, or compaction operations shall resume after ascertaining that the in-place density and undisturbed condition of the previously-placed fill meets the requirements of this Section.

3.02 EXCAVATION

A. General Requirements

1. Excavate to the lines and grades indicated, and no deeper unless approved.
2. Excavate and backfill using appropriate methods and equipment in sufficient quantity, models, and sizes to perform the work in the minimum time possible.
3. Excavation, backfilling, and other earthwork activities shall conform with the Contract Documents and submittals that are acceptable to the Owner's Representative. No work shall be performed unless it is conducted under the observation of the Owner's Representative, and in accordance with the submitted schedule and sequence.
4. Coordinate the sequence of excavation with all other construction activities.
5. Prevent disturbance to soil and backfill subgrades.
6. Exercise care to preserve the material below and beyond the lines of all excavations. Where excavation is carried below required grade, backfill to the subgrade according to methods and materials approved by the Owner's Representative.
7. Employ measures to minimize fugitive dust during the construction such as watering-down the site or spreading hygroscopic salts. All measures shall be taken to prevent visible dust from leaving the project site.

D. Special Excavation

1. Excavation to occur within drip line of existing trees to remain shall be performed with an air-spade by a contractor with at a minimum of 5 years experience.
2. Top soil to depth of 6" shall be stripped and stockpiled separately from other excavations. and removed and disposed of off-site.

- B. Notify the Owner's Representative when excavations have reached the required elevations. The Owner's Representative will observe the excavations and bearing conditions. After review by the Owner's Representative, the excavations may be required to proceed deeper or additional measures taken, due to Contractor disturbance of the subgrade or variation in subsurface conditions.
- C. Unauthorized Excavations
  - 1. Unauthorized excavation consists of removal of materials beyond required subgrade elevations or dimensions without specific acceptance of the Owner's Representative. Unauthorized excavation, as well as remedial work directed by the Owner's Representative shall be at the Contractor's expense.
  - 2. Backfill and compact unauthorized excavations with Granular Fill, Crushed Stone, Lean Concrete, Flow Fill or other suitable material as directed by the Owner's Representative.
- D. Maintenance of Excavations and Slopes
  - 1. Stability of excavations and job safety are the sole responsibility of the Contractor.
  - 2. Shoring and bracing of trenches and other excavations, and excavation geometries and methods, shall be in accordance with applicable OSHA requirements and the requirements herein.
  - 3. Slopes shall be protected from erosion as required to prevent instabilities, loss of ground or movement of soil offsite or into wetlands or water bodies at all times during the work.

### 3.03 DEWATERING

- A. The methods of controlling surface water, precipitation, seepage, and groundwater both inside and outside excavations are the option of the Contractor who shall be solely responsible for the performance, location, arrangement, and depth of any system or systems selected to accomplish the Work. The system shall be designed, operated and maintained in such a manner as to prevent soil disturbance, undermining or the pumping of fine grained soils during dewatering.
- B. Obtain all permits and approvals required for discharge of dewatering effluent.
- C. Inside the excavation limits, lower and maintain the water level in the soil to a minimum of 1 ft below the excavation level, in advance of excavation.
- D. Maintain sump pits and pumps inside the excavation limits during excavation, as necessary, to collect groundwater seepage, precipitation, and surface water runoff.
- E. Dewater such that final excavation, foundation construction and backfilling operations are conducted in-the-dry.
- F. During backfilling operations, maintain the water level a minimum of 1 ft below the top of backfill at all times during placement and compaction.
- G. Provide collection, pumping, and sedimentation control to reduce suspended solids in effluent prior to discharge. Discharge construction dewatering effluent in accordance with all applicable rules, regulations, permits and all authorities having jurisdiction over the work prior to discharge of effluent. Coordinate discharge locations and related activities with the Owner's Representative.

- H. Modify the system(s) at no additional cost to the Owner if, after installation and while in operation, it causes or threatens to lower surrounding groundwater levels, cause damage to existing and new site improvements, or have other adverse effects.
- I. Repair damage, disruption, or interference to site improvements directly or indirectly caused by the Contractor's dewatering activities at no additional cost to the Owner.
- J. Locate dewatering system components where they will not interfere with construction activities.
- K. Comply with federal, state, and local codes, ordinances, and regulations for disposal of discharge effluent and collected sediment.
- L. Maintain continuous and complete effectiveness of dewatering systems and surface water control during construction as necessary.
- M. Remove and backfill dewatering elements when no longer required using methods acceptable to the Owner's Representative. Backfill voids resulting from dewatering system removal with cement grout, concrete, or other material judged acceptable by the Owner's Representative to prevent or mitigate loss of ground.
- N. Cease discharge immediately upon discovery, through testing or other means, that the discharge is not in compliance with the requirements of the applicable permits.

#### 3.04 SUBGRADE PREPARATION

##### A. Pavements

1. Subgrades to within 6 in. below the select base materials for sidewalk plaza areas shall consist of recompacted site fill soils that are free of organic matter, stable under proof-compaction, and otherwise suitable to the Owner's Representative.
2. Pavement subgrades shall be proof-compacted using equipment acceptable to the Owner's Representative. During proof rolling, locations that appear soft, exhibit weaving, or are otherwise unstable shall be excavated to firm material or stabilized with Crushed Stone or other suitable compacted Common or Granular Fill. Common Fill or other suitable material shall then be placed in compacted layers to the proposed base coarse subgrade elevation.

##### B. Seeded Lawn Areas - See Section 329200 – Seeded Lawns.

#### 3.05 BACKFILLING

##### A. General

1. Backfill excavations as promptly as work permits, but not until the subgrade, or below grade construction, is acceptable to the Owner's Representative.
2. Subgrades that become frozen, saturated or otherwise disturbed shall be excavated, recompacted or otherwise improved using measures acceptable to the Owner's Representative, prior to placement of fill or structures.
3. Construct finished backfill surfaces to within ½-in. of the grades indicated on the Drawings.

4. Maintain the moisture content of backfill material as it is being placed to levels that allow for compaction to the specified degree of compaction.
5. Backfill materials brought to the site must be obtained from approved borrow source. No material shall be imported without prior approval by the Owner's Representative. The Contractor shall remove all imported materials that have not been accepted by the Owner's Representative at no additional cost to the Owner.
6. During compaction operations, incidental compaction due to traffic by construction equipment other than that used specifically in compaction operations will not be credited toward the required minimum coverages specified.
7. Compaction by puddling or flooding is prohibited.
8. Placement of backfill shall be systematically conducted in the specified uniform layer thicknesses.
9. Measurement of the backfill layer or lift thickness shall be conducted prior to compaction.
10. Backfill surfaces that become disturbed or otherwise unacceptable to the Owner's Representative shall be removed and replaced with acceptable backfill.
11. Backfill excavations as promptly as work permits, but not until completion of the following:
  - a. Acceptance by the Owner's Representative of construction below finish grade including, where applicable, damp proofing, waterproofing, utility placements, etc.
  - b. Completion of quality control testing, acceptance by the Owner's Representative and recording locations of underground utilities.
  - c. Removal of concrete formwork unless formwork is specified to remain in place.
  - d. Removal of trash and debris.

B. Compaction Equipment

1. The Contractor shall only use compaction equipment deemed acceptable by the Owner's Representative.
2. Compact backfill materials with a minimum of four coverages of acceptable compaction equipment, and to the minimum degrees of compaction specified herein.
3. Compaction in open areas shall be conducted with heavy smooth-wheeled vibratory rollers imparting a dynamic force of at least 25,000 lbs, or other as approved by the Owner's Representative.
4. Compaction in confined areas (against walls, piers, and in trenches) shall be conducted with acceptable equipment such as hand-guided vibratory compactors or mechanical tampers or other as approved by the Owner's Representative.

C. Placement and Compaction

1. Granular Fill and Select Fill Materials (e.g., pavement base materials, utility bedding materials): Place Granular Fill and Select Fill Materials in lifts not exceeding 12 in. in open areas, and 6 in. in confined areas such as trenches and adjacent to footings and pipes.
2. Common Fill: Place in layers not to exceed 12 in. when utilizing heavy compaction equipment and 6 in. when utilizing light hand operated compaction equipment.
3. Particles larger than 2/3 of lift thickness shall be removed from all fills prior to compaction.
4. Backfilling against walls shall commence only after the walls and support slabs have sufficiently cured to attain the strength required to resist backfill pressures without damage. The Contractor shall correct any damage to the structures caused by backfilling at no additional cost to the Owner.

5. Backfilling Utility Trenches
  - a. Do not backfill trenches until the Owner's Representative has made tests and observations and authorizes backfilling
  - b. Use care in backfilling to avoid damage or displacement of pipe systems during backfilling activities.
  - c. Place and compact the indicated bedding material below the pipe or utility inverts.
  - d. Perform the work in accordance with applicable utility sections listed under related work and in conformance with trench details shown on the Drawings.
  
6. Backfill shall be placed to the following degrees of compaction using the material's maximum dry unit weight determined in accordance with ASTM D1557:
  - a. Do not backfill trenches until the Owner's Representative has made tests and observations and authorizes backfilling.
  - b. Use care in backfilling to avoid damage or displacement of pipe systems during backfilling activities.
  - c. Place and compact the indicated bedding material below the pipe or utility inverts.
  - d. Perform the work in accordance with applicable utility sections listed under related work and in conformance with trench details shown on Drawings.
  
7. Backfill shall be placed to the following degrees of compaction using the material's maximum dry unit weight determined in accordance with ASTM D1557:
  - a. Beneath footings and soil supported slabs: 95%
  - b. Landscaped areas: 90%
  - c. Beneath utilities:
    - i. within 3 ft of invert: 95%
    - ii. below 3 ft of invert: 92%
  - d. Beneath parking lots, roadways, and sidewalks:
    - i. within 3 ft of finished grade: 95%
    - ii. below 3 ft of finished grade: 92%
  - e. Compact ½-in. and ¾ in. Crushed Stone with at least 2 coverages of vibratory compaction equipment in maximum 6 inch lifts.
  - f. Compact Washed Stone Dust with at least 2 coverages of vibratory compaction equipment in maximum 3 inch lifts.

**END OF SECTION**

**SECTION 321313  
CHAIN LINK FENCE**

**PART 1 - GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Provide labor, materials, equipment, services and transportation to complete work.
  - 1. Black Vinyl Coated Galvanized Chain Link Fence, Gates including fabric, rails, posts, caps, hardware and concrete footings.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Section 310000 - Earthwork
- B. Section 033000 - Cast-In-Place Concrete for footings and foundations.

1.04 REFERENCES:

- A. American Society for Testing Materials (ASTM) Publications:
  - 1. A120: Specification for Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized) welded and seamless, for ordinary uses.
  - 2. A121: Specification for Zinc-Coated (Galvanized) Steel Barbed Wire.
  - 3. A392: Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
- B. Chain Link Fence Manufacturers Institute, New York, NY.
- C. AASHTO M181

1.05 SUBMITTALS:

- A. Submittals: in accordance with Section 013300 – Submittal Procedures.
- B. Submit product data, shop drawings, samples and certificates simultaneously as one complete package.
- C. Product Data: submit manufacturer's specifications and installation instructions.
- D. Shop Drawings: Submit shop drawings locations, components, materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.

- E. Samples: submit two samples of fencing materials. Mark or tag each sample and submit 30 days prior to erection of fence.
- F. Certificates: submit certified test reports with results of tests for fence finish.

1.06 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
- B. Manufacturer: Company operating in the United States having U.S. manufacturing facility/facilities specializing in manufacturing chain link fence products with at least 5 years' experience.
- C. Fence contractor: Company with demonstrated successful experience installing similar projects and products in accordance with ASTM F567 and have at least 5 years' experience.
- D. Tolerances: Current published edition of ASTM specifications tolerances apply. ASTM specification tolerances supersede any conflicting tolerance.

1.07 DIG SAFE EXISTING SUBSURFACE UTILITIES IDENTIFICATION

- A. Notify Dig Safe for identification of existing subsurface utilities before starting work and comply with their requirements.

1.08 DELIVERY, STORAGE AND HANDLING:

- A. Delivery: Deliver products to site per contract requirements.
- B. Storage: Store and protect products off the ground when required.

**PART 2 - PRODUCTS**

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2.01 GENERAL:

- A. Black PVC-coated steel fabric with galvanized and factory-painted steel posts, hardware, and fittings.
- B. Steel pipe dimensions and weights: ASTM A120, Schedule 40. Dimensions specified are nominal pipe sizes.
- C. Dimensions and weight tolerances: Plus or minus five percent.
- D. Zinc Coating: Minimum 2.0 ounces per sq. ft.
- E. Provide posts with tops of same material, and designed to fit securely over post and carry top rail. Carry apron around outside of post at base of top fitting.
- F. Ferrous metal fittings, posts, fence, gate framework, and accessories galvanized with heavy coating of 2.0 oz. pure zinc spelter per sq. ft. or surface area to be coated. Use hot-dip

process. Thinner zinc coatings, electro-galvanizing, zinc paint or cold galvanizing compounds not used as substitute for hot-dipped galvanized finish not acceptable.

- G. Fabricate and weld before hot-dip galvanizing. Weld conforming to American Welding Society standards.
- H. Hot-dip galvanized gate frame, after welding, if bolted or riveted corner fittings not used.
- I. Galvanize fittings, posts, fence and gate framework, and accessories, then epoxy phenolic primed and top coated with matching PVC, using thermal bond process.

## 2.02 FENCE FABRIC:

- A. General: Comply with ASTM A 392, CLFMI CLF 2445.
- B. Fabric woven in 2-in. mesh from PVC coated wire in a 6 ft. height with knuckled selvages top and bottom. PVC coating thermally fused and bonded over galvanized plastic primed commercial quality steel wire with minimum coating thickness of 7 mils. Coated wire 6-gauge core class 2B mesh / 0.192-in. diameter with minimum breaking strength of 2,170 lbs. Color to be selected to match total fence system complying with ASTM F 934. (0.40 oz. of zinc per sq. ft. of surface).

## 2.03 GATES

- A. General: Comply with ASTM F 900 for double swing gate types.
  - 1. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1083 and ASTM F 1043 for materials and protective coatings.
  - 2. Metal Pipe and Tubing: Aluminum. Comply with ASTM B 429 and ASTM F 1043 for materials and protective coatings.
- B. Frames and Bracing: Fabricate members from round tubing with outside dimension and weight according to ASTM F 900 and the following:
  - 1. Gate Fabric Height: 2 inches less than adjacent fence height.
  - 2. Leaf Width: 72 inches.
  - 3. Frame Members:
    - a. Tubular Steel 1.90 inches round.
- C. Frame Comer Construction:
  - 1. Assembled with comer fittings and 5/16-inch-diameter, adjustable truss rods for panels 5 feet wide or wider.
- D. Hardware: Latches permitting operation from both sides of gate, hinges, center gate stops) and keepers for each gate leaf more than 5 feet wide. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

2.04 TENSION WIRE:

- A. Color matched PVC coated No. 7-gage outside diameter, zinc coated coil spring steel wire having 0.40 oz of zinc coating per sq. ft. of wire surface.

2.05 TIE WIRES:

- A. Tie wires, for fastening fence fabric to line posts and rails, not less than 6 gage (outside diameter) color matched PVC coated galvanized steel wire.

2.06 LINE POSTS:

- A. 2-1/2 in. outside diameter steel pipe weighing not less than 3.65 lb. per ft., or 1-7/8 in. high carbon steel H-beams weighing not less than 2.70 lb. per ft.

2.07 END, CORNER, AND PULL POSTS:

- A. 3 in. outside diameter steel pipe weighing not less than 5.79 lb. per ft., or 2-1/2 in. square steel tube weighing not less than 5.14 lb. per ft., or 3-1/2 in. by 3-1/2 roll-formed, steel corner section weighing not less than 5.14 lb. per ft.

2.08 RAILINGS:

- A. 1-5/8 in. outside diameter steel pipe with minimum weight of 2.27 lb. per ft. or 1-5/8 in. by 1-1/4 in., 14-gage roll-form section, for top railing and railings for top middle and bottom braces between terminal posts and adjacent line posts.

2.09 TRUSS:

- A. 3/8 in. diameter steel rod diagonal truss braces between terminal and adjacent line posts.

2.10 FITTINGS:

- A. Heavy-duty malleable iron or pressed steel fittings of suitable size to produce strong construction.

2.11 STRETCHER BARS:

- A. Flat bars with minimum cross section dimensions of 1/4 in. by 3/4 in, full height of fabric, secured with bar bands of minimum 11-gage sheet steel, spaced approximately 15 in. on centers and bolted with 3/8 in. diameter bolts, for attaching fabric to terminal posts.

2.12 CONCRETE FOOTINGS AND FOUNDATIONS:

- A. Conforming to Section 033000 – Site Cast-In-Place Concrete.

2.13 GROUT:

- A. One part Portland cement and three parts of clean, sharp, well-graded sand with minimum water for proper workability for posts set in solid rock.

### **PART 3 - EXECUTION**

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#### 3.01 GENERAL:

- A. Examine conditions under which fence and gates are to be installed. Notify Architect/Engineer, in writing, of improper conditions of work.
- B. Do not proceed with work until unsatisfactory conditions have been corrected.
- C. Verify measurements at site.
- D. Call Dig Safe in advance of fence installation schedule to have utility locations identified prior to commencing excavation for fence post. Adjust fence post locations to avoid utilities and other permanent site or building elements.
- E. Do not install fence until final grading is complete and finish elevations are established.
- F. Do not drive equipment on areas to be landscaped, except as approved by Architect/Engineer. Areas not accessible from roads shall be protected with heavy wood planking. Remove barricades and protection at completion of project. Repair damaged landscape surfaces.

#### 3.02 INSTALLATION:

##### A. Footings:

- 1. Rod and compact concrete around posts. Slope top of footings above level of adjacent grade, and trowel finish.
- 2. Size:
  - a. 6 in. minimum dia, plus outside dimension of post.
  - b. Set corner, end, pull, and gate posts 42 in. into concrete.
  - c. Set line posts set 36 in. into concrete.
  - d. Total depth of concrete 6 in. greater than required for post embedment.
- 3. Time of Set: 48-hrs before rails are erected or before fabric is applied or stretched.

##### B. Framing:

- 1. Install line posts not more than 10 ft. apart.
- 2. Install pull posts not more than 600 ft. apart where a straight run of fence exceeds 600 ft. and where fence line changes direction by more than 15 degrees but less than 30 degrees.
- 3. Install corner posts where the fence line changes direction by more than 30 degrees.
- 4. Set posts in concrete footings, plumb and true to line.

5. Brace and truss end, pull, corner, and gate posts to adjacent line posts. Provide brace to match top rail spaced midway between top rail and tension wire and extending to adjacent line posts. Provide brace to match top rail spaced midway between top rail and tension wire and extending to adjacent line post. Truss diagonally with 5/16 in. dia tension rod with turnbuckle.
6. Fasten top rail to end, pull, gate and corner posts. Pass top rail through fittings of line posts.
7. Provide expansion and contraction joints in top rail for each 100 lin ft. of fence.
8. Fasten bottom tension wire to end, pull, gate, corner, and line posts.
9. Maximum area of unbraced fence not to exceed 1500 square feet.
10. Use galvanized sleeve and grout posts or install with suitable galvanized flange casings and galvanized anchor bolts as directed by Engineer.
11. When rock is encountered, set posts into rock a minimum depth of 12 in. for line posts and 18 in. for terminal posts. If solid ledge is encountered without overburden of soil. Provide post holes at least 1 in. greater in diameter than post, fill post holes with concrete work post into hole taking care not to cause voids, remove excess concrete and crown remainder at top to shed water. Where solid rock is covered by overburden, do not exceed total setting depth required for setting in earth, grout posts into rock as described.

C. Fabric:

1. Place fabric on outside of posts and stretch to avoid bulging or buckling.
2. Fasten at line posts, top rail, and bottom tension wire with aluminum or zinc PVC coated ties. Space ties not more than 15 in. apart on line posts and not more than 24 in. apart on rail and tension wire.
3. Fasten at terminal posts at intervals not exceeding 15 in. using flat or beveled galvanized steel bands with 5/16 in. x 1-1/4 in. galvanized carriage bolts and nuts.
4. Make tie connections on interior side of fence.
5. Provide steel angle metal closures where finished ground surface is more than two inches below bottom tension wire. Bolt steel angle to fence posts, and install reinforcing rods and bracing members as approved. Install rods of accepted length vertically. Where drainage ditches cross fence line, provide concrete ditch lining and steel reinforcing bar grill.
6. Install gates plumb, level, and secure for full width of opening and hardware adjusted for smooth operation.
7. Electrical Ground where a power line carrying more than 600 volts passes over fence, install ground rod at nearest point directly below each point of crossing.

3.03 TOUCH-UP AND REPAIR WORK:

- A. Remove and replace fencing which is improperly located or is not true to line, grade and plumb within tolerances as indicated.
- B. Repair damaged vinyl-coated components as recommended by manufacturer.

3.04 CONTRACT CLOSEOUT:

- A. Provide in accordance with Section 017000 – Closeout Procedures.

**END OF SECTION**

**SECTION 321200  
BITUMINOUS CONCRETE SIDEWALKS**

**PART 1 - GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the Contract and General Conditions and all Sections within Division 01 – General Requirements which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Provide labor, materials, equipment, services and transportation to complete work.
  - 1. Bituminous Concrete Sidewalks.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Section 310000 – Earthwork for gravel base
- B. Section 329200 – Seeded Lawn for soil in lawn areas

1.04 REFERENCES

- A. Comply with applicable requirements of:
  - 1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridges, Department of Public Works, latest edition, Boston, Massachusetts.
  - 2. American Association of Nurserymen, American Standards for Nursery Stock, (ANSI Z60.1), latest edition, published by the American Association of Nurserymen, 1250 I Street, N.W., Suite 500 Washington, D.C. 20005.
  - 3. ASTM: American Society of Testing Materials.
  - 4. ANSI: American National Standards Institute.
  - 5. AOAC: Association of Official Agricultural Chemists.
  - 6. USDA: United States Department of Agriculture.

1.05 SUBMITTALS

- A. Submittals: in accordance with Section 013300 – Submittal Procedures.

- B. Product Data: Submit manufacturer's information for:
  - 1. Bituminous Concrete Mix

## **PART 2 - PRODUCTS**

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### 2.01 BITUMINOUS CONCRETE

- A. Bituminous concrete: in accordance with the 1988 Massachusetts Highway Department Specifications for Highways and Bridges for Class I-1, Bituminous Concrete Pavements and Foundation Bases Sections 420., 460., 700. and M-3 where applicable, including the most current, subsequent Supplemental Specifications and Standard Special Provisions.
- B. Bituminous Concrete Hot-Mix Asphalt Sidewalk consisting of:
  - a. 1-1/4" MassDOT-Type "I"-3/8-inch State Top" surface course, minimum
  - b. 2" MassDOT - Type "I" binder course, minimum

### 2.02 GRAVEL BORROW

- A. Gravel Borrow as specified in Section 310000 – Earthwork.

## **PART 3 - EXECUTION**

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### 3.01 GRAVEL BORROW BASE

- A. Prepare subgrade and placement and compaction of fill and base materials as specified in Section 310000 – Earthwork.

### 3.02 BITUMINOUS CONCRETE PAVING INSTALLATION

- A. Workmanship, transportation, spreading, finishing, compaction and all other relevant guidelines controlling construction methods for hot-mix asphalt work shall be in compliance with Sections 420., 460. and 700. of the Massachusetts Department of Transportation – Highway Division's (MassDOT's) Standard Specifications for Highways & Bridges, (Class I Bituminous Concrete Pavement, Type I-1)

**END OF SECTION**

**SECTION 329200  
SEEDED LAWN**

**PART 1 - GENERAL**

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1.01 GENERAL PROVISIONS

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS within Division 00 and all Specification Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Provide labor, materials, equipment, services and transportation to complete work.
1. Seeded Lawn.
  2. Preparation of Lawn Planting Soils from Off Site Base Loam
  3. Watering, fertilizing and mowing and maintenance.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Section 310000 – Earthwork for gravel subbase  
B. Section 330000 – Site Cast in Place Concrete for footings and foundations.

1.04 REFERENCES

- A. Comply with applicable requirements of:
1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridges, Department of Public Works, latest edition, Boston, Massachusetts.
  2. American Association of Nurserymen, American Standards for Nursery Stock, (ANSI Z60.1), latest edition, published by the American Association of Nurserymen, 1250 I Street, N.W., Suite 500 Washington, D.C. 20005.
  3. ASTM: American Society of Testing Materials.
  4. ANSI: American National Standards Institute.
  5. AOAC: Association of Official Agricultural Chemists.
  6. USDA: United States Department of Agriculture.

1.05 SUBMITTALS

- A. Submittals: in accordance with Section 013300 – Submittal Procedures.

B. Product Data: Submit manufacturer's information for:

1. Maintenance Fertilizer
2. Protective fencing materials.
3. Ground Limestone
4. Superphosphate

C. Samples and Testing

1. Prior to ordering the below listed materials, submit two representative samples for testing and one to Designer for approval. Do not order materials until Designer's approval has been obtained. Delivered materials to match approved samples.
  - a. Additional Off Site Base Loam: Provide representative samples of off-site topsoil for testing and approval. Deliver samples to testing laboratory, have testing report sent directly to the Designer and pay costs at no additional cost to Owner.
    - (1) Mechanical and chemical (pH soluble salts) analysis shall be by a public extension service agency or a certified private testing laboratory in accordance with the current "standards" of the "Association of Official Agriculture Chemists".
    - (2) Report shall be submitted at least one month before soils are scheduled to be delivered to site. Soils shall be tested for Phosphorus, Potassium, Calcium, Soluble Salts and soil pH. Location of each sample/source shall be identified on the test report.
2. Obtain written approval of additional Off Site Base Loam prior to delivery of materials to site.

D. Certificates: Submit:

1. Seed grower's certification: Submit manufacturer's certificates of compliance with each shipment of each seed type. Certificate from seed supplier shall indicate seed is true to variety indicated on packaging. Certificates shall include guaranteed percentages of purity, weed content and germination of seed, net weight and date of shipment. No seed may be sown until certificates have been submitted.

D. Schedules: Submit:

1. Seeding operation schedule for approval.

1.06 QUALITY ASSURANCE

A. Qualifications: contractor shall have minimum five years experience in seed installation.

B. Regulatory Requirements

1. Secure permits, licenses, and pay fees including traffic control.
2. Comply with laws, regulations, and quarantines for agricultural and horticultural products.

1.08 DELIVERY, STORAGE AND HANDLING OF SEED, FERTILIZER AND SOIL AMENDMENTS

- A. Packing and Shipping: deliver materials in unopened containers bearing the manufacturer's name and guaranteed statement of analysis. Transport materials without damage. Protect finishes from abrasion, dirt, oils, grease, and chemicals. Pack materials to protect from weather.
- B. Acceptance at Site: verify in writing that delivered materials conform to specifications and approved submittals.
- C. Storage and Protection:
  - 1. Materials shall be uniform in composition, dry and free flowing.
  - 2. Store materials in dry place, on pallets, off the ground; protect from sun. Store materials in a manner, which does not diminish their usability and effectiveness.
  - 3. Protect materials from theft, damage, weather, dirt, oils, grease, and construction.

1.09 PROJECT CONDITIONS

- A. Environmental Requirements: do not deliver, handle or place soils when dry, wet, or frozen.
  - 1. Field Test
    - a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
    - b. If soil will not retain shape it is too dry and should not be worked.
    - c. If soil retains shape and will not crumble, it is too wet and should not be worked.
- B. Seed Planting Seasons:
  - 1. April 15 to June 1
  - 2. September 1 to October 15.
  - 3. Seeding other than within the above season shall be allowed only when ordered by Owner's Representative or when Contractor submits written request for permission to do so and permission is granted. Newly seeded areas, if seeded out of season, must be continuously watered according to good practice if seeding is done between June 1 and September 1. Seeding done outside dates established above shall be solely at Contractor's risk.

1.10 SEQUENCING AND SCHEDULING

- A. Perform lawn work only after planting and other work affecting ground surface has been completed.

- B. The irrigation system will be furnished and installed prior to seeding. Locate, protect, and maintain irrigation system during seeding operations. Repair irrigation system components damaged during operations at Contractor's expense.

#### 1.11 SUBSTANTIAL COMPLETION

- A. Upon establishment of seed lawn, request Engineer's review to determine if work is substantially complete. Submit request a minimum of five days prior to anticipated inspection date. If work is substantially complete, Engineer will issue a Substantial Completion letter identifying commencement of 90 day Maintenance Period.
  - 1. If work is not substantially complete, Engineer will issue a written list of outstanding work to be done on a timely schedule agreed upon by Contractor and Engineer.
  - 2. Contractor shall notify Engineer when outstanding work is completed and ready for review. When outstanding work is complete, as determined by Engineer, a letter of Substantial Completion will be issued.

#### 1.12 90 DAY MAINTENANCE PERIOD

- A. Maintain lawn areas until Final Acceptance.

#### 1.12 FINAL ACCEPTANCE

- A. After the 90 day maintenance period lawn areas will be reviewed for final acceptance.
- B. Conditions of Final Acceptance
  - 1. Lawn acceptance shall be given for entire lawn area. No partial acceptance shall be given.
  - 3. Lawns shall exhibit uniform, thick, well- developed stand of grass. Lawn areas shall have no bare spots in excess of four inches in diameter and bare spots shall comprise no more than two percent of total area of lawn.
  - 5. No lawn areas shall exhibit signs of damage from erosion, washouts, gullies, or other causes.
  - 6. Pavement surfaces and site improvements adjacent to lawn areas shall be clean and free of spills from placing or handling of loam borrow and sodding operations.
- C. Inspection and Final Acceptance
  - 1. Upon completion of 90 Day Maintenance Period, request Engineer's review to determine if work is acceptable. Submit request a minimum of five days prior to anticipated inspection date. If work is acceptable, Engineer will issue a Final Acceptance letter. From this date forward, lawn maintenance will be the responsibility of the Owner. Following acceptance of lawns, Owner will be given access to lawn areas for maintenance work.
    - 1. If work is not accepted, Engineer will issue a written list of outstanding work. Maintenance period to be extended until completion of work.

2. Contractor shall notify Engineer when outstanding work is completed and ready for review. When work is complete, as determined by Engineer, a letter of Final Acceptance will be issued.

## **PART 2 - PRODUCTS**

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### 2.01 ON SITE TOPSOIL

- A. On-site topsoil defined above to be removed and disposed of off-site.

### 2.02 OFF SITE BASE LOAM

- A. Furnish off site Base Loam as required for the work of this Section from approved off-site sources.
- B. Off site Base Loam shall be a "fine sandy loam" or a "sandy loam" determined by mechanical analysis and based on the "USDA classification system". It shall be of uniform composition, without admixture of subsoil. It shall be screened and free of stones greater than one inch, lumps, plants and their roots, debris and other extraneous matter over one inch in diameter or excess quantities of smaller pieces of the same materials as determined by the Owner's Representative. It shall not contain toxic substances harmful to plant growth. It shall be obtained from areas which have never been stripped before and have a history of satisfactory vegetative growth.
- C. Topsoil shall have an acidity range of pH 5.6 to pH 6.5 and shall contain not less than 4% nor more than 12% organic matter as determined by the loss of ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of +230° F., plus or minus 9° F.

### 2.03 PRE-PLANT FERTILIZER

- A. Complete, fertilizer made from all-natural ingredients complying with State and Federal fertilizer laws. Fertilizer shall contain the following available plant food by weight, unless soils test indicate a need for different composition:

	Nitrogen	Phosphorus	Potash
Deciduous Trees and Shrubs	2%	3%	3%
Evergreen Trees and Shrubs	2%	3%	3%

- B. Fertilizer: Pro Start 2-3-3 manufactured by North Country Organics, Bradford, Vermont 05033, ph# 802.222.4277 or approved equal.
- B. Fertilizer to be delivered in original unopened standard size bags showing weigh, analysis ingredients and manufacturer's name.

### 2.04 POST PLANTING FERTILIZER

- A. Post Planting Fertilizer to be mixed with soil:

1. Complete, fertilizer made from all-natural ingredients complying with State and Federal fertilizer laws. Fertilizer shall contain the following available plant food by weight, unless soils test indicate a need for different composition:

	Nitrogen	Phosphorus	Potash
Lawns	5%	3%	4%

2. Fertilizer: Pro Gro 5-3-4 manufactured by North Country Organics, Bradford, Vermont 05033, ph# 802.222.4277.
3. Fertilizer to be delivered in original unopened standard size bags showing weigh, analysis ingredients and manufacturer's name.

#### 2.04 WATER

- A. Water: furnished by Contractor, suitable for irrigation and free from ingredients harmful to plant life. Hose and other watering equipment furnished by Contractor.

#### 2.05 SEED

- A. Seed mixture: fresh, clean, new crop seed. Seed can be mixed by an approved method on site or can be mixed by dealer. If seed is mixed on site, each variety shall be delivered in original containers bearing dealer's guaranteed analysis. If seed is mixed by dealer, Seeding Contractor shall furnish to the Owner's Representative the dealer's guaranteed statement of composition of mixture and percentage of purity and germination of each variety.
- B. Seed Mixtures as provided by Tuckahoe Turf, Wood River Junction, Rhode Island to be applied at a rate of 6 pounds per 1000 square feet :

1. High Fescue:

	Proportion of mix after purity	Minimum germination
Jasper Creeping Red Fescue	25%	85%
Victory Chewings Fescue	25%	85%
Warwick Hard Fescue	25%	85%
Limousine Kentucky Bluegrass	15%	80%
Jefferson Kentucky Bluegrass	10%	80%

2. If cultivars as listed are not available, others can be substituted with Owner's Representative's approval.

#### 2.06 PROTECTIVE FENCING

- A. Protect areas adjacent to walks with snow fencing or other approved temporary fencing material.

### **PART 3 - EXECUTION**

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#### **3.01 LAWN WORK SCHEDULE**

- A. Lawn work shall proceed on schedule in conformance with project phasing. These requirements will be strictly adhered to.
- B. Lawn work must be completed on schedule to allow at least one full growing season prior to Final Acceptance.
- C. Contractor responsible for maintenance work on installed lawn until an acceptable lawn is established for a minimum of 60 days.

#### **3.02 EXAMINATION**

- A. Verification of Conditions: in the event field conditions are not in conformance with Contract Documents, notify Engineer in writing.
  - 1. Spot and Invert Elevations: verify field elevations of site improvements such as drainage and utility fixtures, pavements, existing plantings, and subsurface piping conform to Drawings.
  - 2. Finish Grades: verify specified elevations to ensure that fine grading operations have shaped, trimmed, and finished sod bed true to elevation with smooth sloped parallel to finished grade.

#### **3.03 PREPARATION FOR LAWN INSTALLATION**

- A. Protection:
  - 1. Dust Control: upon acceptance of finish grade provide dust control.
  - 2. Erosion Control: upon acceptance of finish grade provide erosion control.
  - 3. Agricultural Chemicals: protect site improvements from contact with agricultural chemicals, soil amendments, and fertilizers.
- B. Surface Preparation:
  - 1. Clean seed bed, pavement or other site improvements prior to installation.

#### **3.04 SOIL PREPARATION AND PLACEMENT OF OFF SITE BASE LOAM**

- A. Place and spread off site base loam over designed area and to a depth greater than required such that after settlement, finished grade conforming to the lines, grades and elevations shown on the Drawings.
- B. Remove stiff clods, lumps, brush, roots, stumps, litter and other foreign material and stones over one inch in diameter and dispose of legally off site.

- C. Immediately prior to seeding or placing sod, the seed bed shall be prepared with a Rockhound or other approved agricultural device that scarifies and loosens the upper ½ to 1-inch of the seed bed for acceptance of seed or sod.
- D. Scarification: cross rake areas to receive lawn so surface of soil will be receptive to holding seed.
- E. Grade lawn areas smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions to drain.
- F. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding.
- G. Thoroughly irrigate areas to receive lawn.

### 3.05 PREPARATION OF OFF SITE BASE LOAM FOR LAWN AREAS

- A. Incorporate pre planting fertilizer into top two inches of off site base loam at a rate of 20 pounds per 1000 square feet following placement and grading

### 3.06 SOWING OF SEED

- A. Seeding: Seeding shall consist of soil preparation, seeding, raking, rolling, weeding, watering and otherwise providing labor and materials to secure establishment of acceptable turf.
- B. Sowing of Seed: Immediately before seed is sown, ground shall be scarified, or raked lightly until surface is smooth, friable, and of uniformly fine texture. No seeding shall be done during windy weather. Sow seed in two directions right angles to each other, applying 3 lbs. of seed per 1,000 sq. feet in each direction. Sow seed evenly using a cultipacker or approved seeding device (if cultipacker is not used, cover seed with thin layer of off site base loam by dragging, light raking or other approved method). Roll in both directions with hand roller weighing approximately one hundred pounds per foot of width, and water with fine spray. Provide protective fencing where required to keep area undisturbed until grass is established.
- C. On slopes of 3:1 or greater, Contractor can, at his option, use erosion control blanket pre-seeded with specified mixtures. Erosion control blanket shall be installed with two staples minimum per square yard.

### 3.07 SEED WATERING

- A. Watering of Seeded Areas
  - 1. First Week: Provide labor and arrange for watering necessary to establish acceptable lawn. In absence of adequate rainfall, watering shall be performed daily and as necessary during first week and in sufficient quantities to maintain moist soil to two inch minimum depth.
  - 2. Second and Subsequent Weeks: Water lawn to maintain adequate moisture in upper 5 inches of soil, necessary for deep root growth promotion.
  - 3. Watering in a manner providing uniform coverage while preventing erosion due to application of excessive quantities over small areas, and prevent damage to finished

surface by watering equipment. Provide sufficient watering equipment to apply one complete coverage to seeded areas in eight hour period.

### 3.08 SEEDED LAWN MAINTENANCE

- A. Maintenance begins immediately after lawn is installed and continues according to the following requirements:
1. Lawns shall be maintained for a minimum of 60 days and as long as required to establish uniform, thick, well-developed stand of grass.
  2. Mowing: Mow lawns at seven day intervals. First mowing when grass has reached 2" to 2 1/4" height, and cut grass to below 1 3/4" height. Subsequent mowings shall cut grass to 1 3/4" height. Mow in the fall until growth of grass ceases, and resume in spring when grass reaches 2 1/4" height.
  3. Mow sloped areas a minimum of one time during maintenance period. 60 day maintenance period shall be extended as necessary to include required cutting. Mowing grass to 3" height.
  4. Apply uniform application of Post Planting Fertilizer at rate of 44 pounds nitrogen per acre throughout maintenance period. Initial application 3 to 4 weeks after seeding. Additional applications shall occur at four week intervals or as directed Owner's Representative.
  5. Lawn areas shall continue to be watered as described above.
  6. After grass has started, areas which fail to show uniform, thick, well-developed stand of grass shall be immediately re-seeded repeatedly until areas are covered with satisfactory growth of grass as determined by Engineer.
  7. Repair damage from erosion, gullies, washouts, or other causes immediately by filling with landscape soil, tamping, re-fertilizing and re-seeding.

### 3.09 CLEANING

- A. Wash and sweep clean paving, site improvements and building surfaces. Clean spills and oversprays immediately. Remove and dispose off-site excess planting mixture, soil and debris.
- B. Following Final Acceptance of lawn areas, remove materials and equipment not required for other planting or maintenance work. Materials and equipment remaining on site shall be stored in locations that do not interfere with Engineer's maintenance of accepted lawns or other construction operations.

### 3.10 PROTECTION

- A. Protect lawn areas against damage with fencing. Protective devices remaining on site shall be removed at Final Acceptance.

**END OF SECTION**

Back Cover

# LIGHTING AND SECURITY CAMERAS AT HANCOCK CEMETERY WALK

## CONSTRUCTION DOCUMENTS

03.10.2015

### PROJECT TEAM:

**LANDSCAPE ARCHITECT**  
Halvorson Design Partnership, Inc.  
25 Kingston St, 5th Floor  
Boston, Massachusetts 02111  
617.536.0380

**ELECTRICAL ENGINEER**  
TMP Engineering  
52 Temple Place  
Boston, Massachusetts 02111  
617.357.6060

### WITH PROJECT ASSISTANCE AND SUPPORT FROM:

**CIVIL ENGINEER**  
Howard/Stein Hudson Associates, Inc.  
11 Beacon Street, 10th Floor  
Boston, Massachusetts 02108  
617.482.7080

**LIGHTING DESIGNER**  
Lumen Studios  
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Groton, Massachusetts 01450  
978.460.0512

## CITY OF QUINCY

THOMAS P. KOCH, MAYOR  
KATHRYN R. HOBIN, PURCHASING AGENT  
DANIEL G. RAYMONDI, COMMISSIONER OF PUBLIC WORKS

### DEPARTMENT OF PUBLIC WORKS

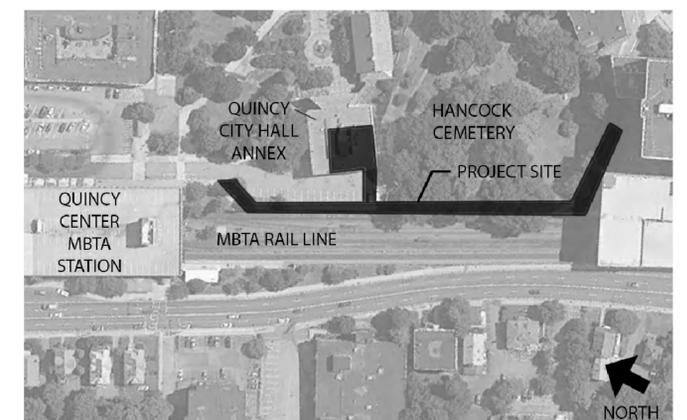
55 SEA STREET  
QUINCY MA 02169  
(617) 376-1959



### DRAWING LIST

- LANDSCAPE ARCHITECTURAL DRAWINGS
- L0 EXISTING CONDITIONS PLAN
  - L1 LANDSCAPE DEMOLITION PLAN
  - L2 MATERIALS, LAYOUT AND GRADING PLAN
  - L3 DETAILS
  - L4 SECTIONS
- ELECTRICAL DRAWINGS
- E0 ELECTRICAL LEGEND AND DETAILS
  - E1 ELECTRICAL SITE PLAN

### PROJECT SITE





**CITY OF QUINCY**  
THOMAS P. KOCH, MAYOR

PLANNING AND COMMUNITY DEVELOPMENT  
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**HALVORSON DESIGN**  
PARTNERSHIP  
LANDSCAPE ARCHITECTURE

25 KINGSTON ST. BOSTON, MA 02111-0200  
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**LIGHTING & SECURITY  
CAMERAS AT HANCOCK  
CEMETERY WALK**  
QUINCY, MA

REVISIONS  
DATE DESCRIPTION

REVISIONS	DATE	DESCRIPTION

PREPARED BY: RH

PROJECT NO:

DRAWN BY: RH

CHECKED BY: RH, BU

SCALE: 1"=20'-0"

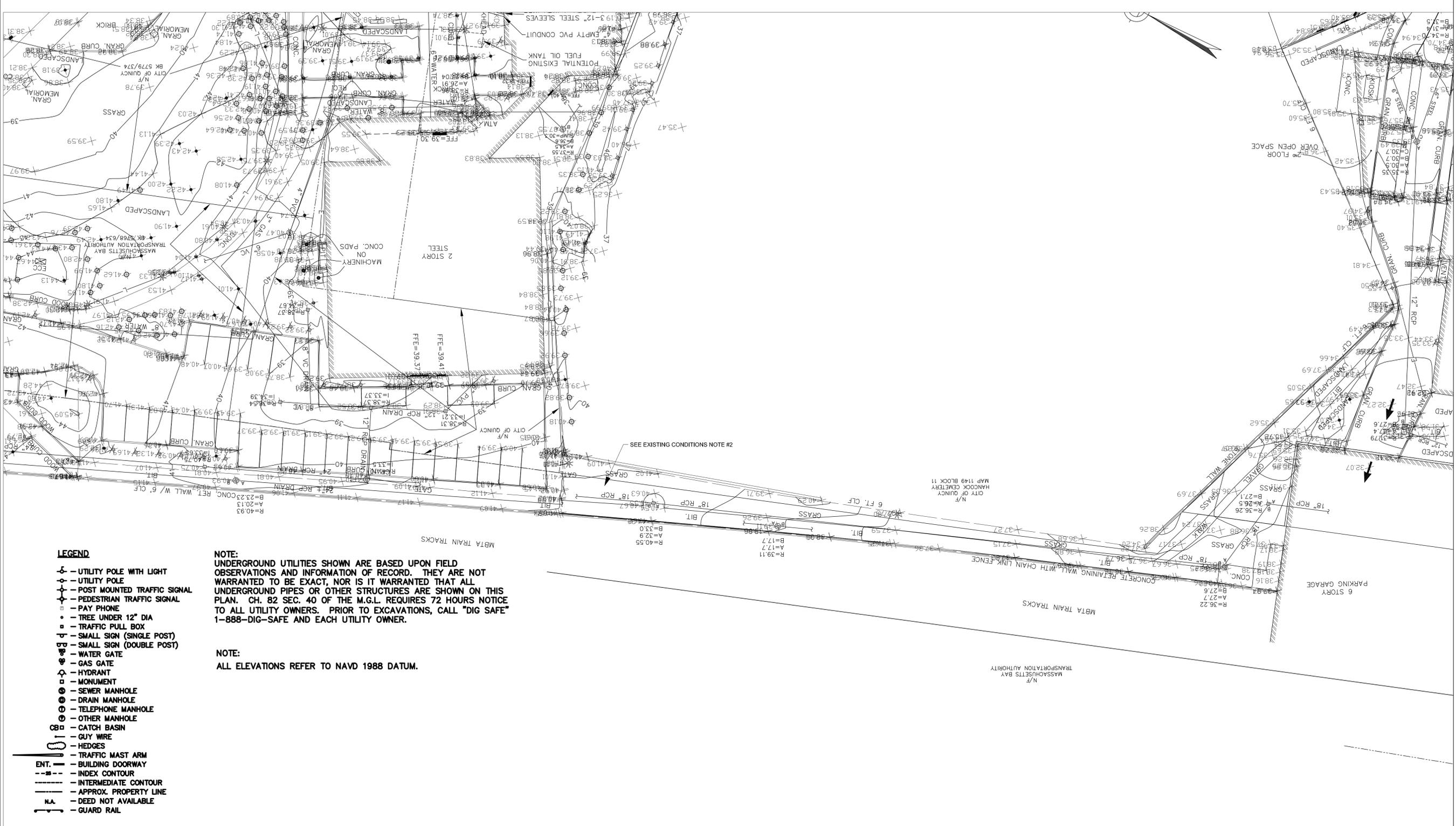
SUBMISSION:

100% CONSTRUCTION  
DOCUMENTS

MARCH 10, 2015

**EXISTING  
CONDITIONS  
PLAN**

**LO**



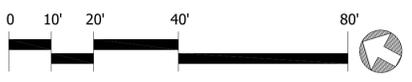
- LEGEND**
- UTILITY POLE WITH LIGHT
  - UTILITY POLE
  - POST MOUNTED TRAFFIC SIGNAL
  - PEDESTRIAN TRAFFIC SIGNAL
  - PAY PHONE
  - TREE UNDER 12" DIA
  - TRAFFIC PULL BOX
  - SMALL SIGN (SINGLE POST)
  - SMALL SIGN (DOUBLE POST)
  - WATER GATE
  - GAS GATE
  - HYDRANT
  - MONUMENT
  - SEWER MANHOLE
  - DRAIN MANHOLE
  - TELEPHONE MANHOLE
  - OTHER MANHOLE
  - CATCH BASIN
  - GUY WIRE
  - HEDGES
  - TRAFFIC MAST ARM
  - ENT. — BUILDING DOORWAY
  - INDEX CONTOUR
  - INTERMEDIATE CONTOUR
  - APPROX. PROPERTY LINE
  - N.A. — DEED NOT AVAILABLE
  - GUARD RAIL

**NOTE:**  
UNDERGROUND UTILITIES SHOWN ARE BASED UPON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. CH. 82 SEC. 40 OF THE M.G.L. REQUIRES 72 HOURS NOTICE TO ALL UTILITY OWNERS. PRIOR TO EXCAVATIONS, CALL "DIG SAFE" 1-888-DIG-SAFE AND EACH UTILITY OWNER.

**NOTE:**  
ALL ELEVATIONS REFER TO NAVD 1988 DATUM.

**EXISTING CONDITIONS NOTES**

- EXISTING CONDITIONS PLAN IS BASED ON EXISTING CONDITIONS SURVEY, PREPARED BY A-PLUS CONSTRUCTION SERVICES CORP., 17 ACCORD PARK DRIVE, SUITE 102, NORWELL, MA 02061. CONTACT: MICHAEL COLEMAN, PLS. DATED NOVEMBER 8, 2013
- THE ACTUAL EXISTING SURFACE AND SUBSURFACE CONDITIONS VARY FROM WHAT IS SHOWN ON THIS DRAWING, AS SEVERAL PROJECTS HAVE OCCURRED WITHIN AND ADJACENT TO THE PROJECT SITE AREA, WHICH HAVE HAD A SIGNIFICANT IMPACT ON SITE CONDITIONS. OLD CITY HALL IMPROVEMENTS PROJECT HAS RESULTED IN MODIFICATIONS TO SURFACE CONDITIONS, UTILITIES AND SUBSURFACE UTILITIES BETWEEN OLD CITY HALL, CITY HALL ANNEX, HANCOCK CEMETERY AND THE MBTA RAIL LINE.





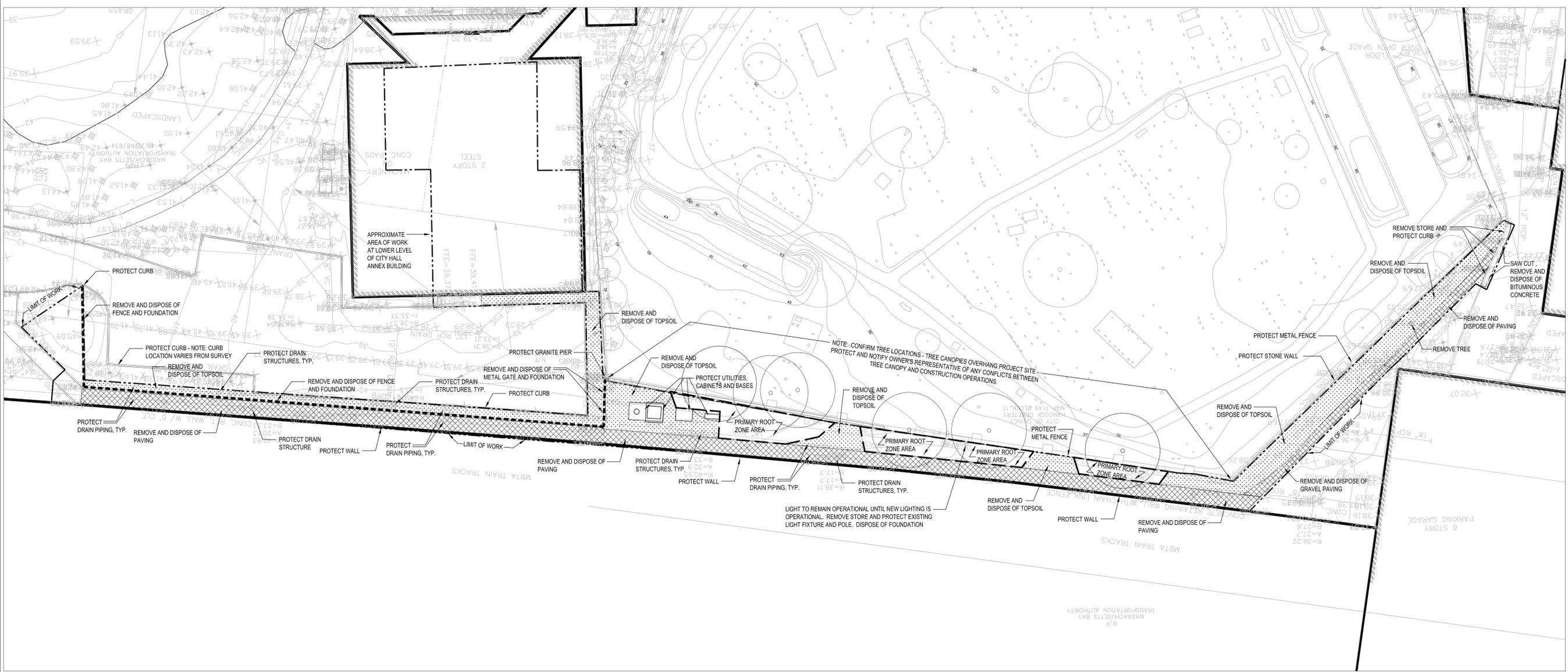
CITY OF QUINCY  
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**LIGHTING & SECURITY  
CAMERAS AT HANCOCK  
CEMETERY WALK**  
QUINCY, MA



**LANDSCAPE DEMOLITION NOTES**

- EXISTING CONDITIONS SURVEY WAS PROVIDED BY MICHAEL COLEMAN PLS, A-PLUS CONSTRUCTION SERVICES CORP, 17 ACCORD PARK DRIVE, SUITE 102, NORWELL, MA 02061.
- PERFORM A THOROUGH SITE EXAMINATION TO DETERMINE THE EXTENT OF DEMOLITION NECESSARY TO PREPARE THE SITE FOR CONSTRUCTION AND SHALL VERIFY ITEMS TO BE DEMOLISHED OR SALVAGED WITH THE OWNER PRIOR TO BEGINNING WORK.
- CARE SHALL BE TAKEN NOT TO DAMAGE ITEMS DESIGNATED TO REMAIN OR DESIGNATED TO BE SALVAGED; REPAIR OR REPLACEMENT OF DAMAGED ITEMS THEREBY DESIGNATED SHALL BE AT THE CONTRACTOR'S EXPENSE.
- DISPOSAL OF ITEMS DESIGNATED TO BE REMOVED SHALL CONFORM TO APPLICABLE LAWS AND REGULATIONS. SALVAGABLE MATERIAL SHALL BE DELIVERED BY THE CONTRACTOR TO CITY OWNED STORAGE AREAS WITHIN CITY LIMITS AS DESIGNATED BY THE OWNER. A PLAN INDICATING AREAS FOR STOCKPILING MATERIALS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO BEGINNING WORK.
- REFER TO SITE UTILITY PLANS FOR UTILITY SITE PREPARATION AND DEMOLITION INFORMATION. VERIFY ALL UTILITY LOCATIONS PRIOR TO EXCAVATION. REPORT DISCREPANCIES OR CONFLICTS IN WRITING TO THE DESIGNER AND RECEIVE INSTRUCTIONS PRIOR TO PROCEEDING.
- REPAIR DAMAGE DUE TO CONSTRUCTION OPERATIONS INSIDE AND OUTSIDE THE LIMIT OF WORK LINE.
- PROVIDE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES.
- ERECT AND MAINTAIN TEMPORARY CONSTRUCTION FENCING TO ISOLATE WORK AND ENSURE PUBLIC SAFETY, WHILE MAINTAINING PUBLIC PEDESTRIAN ACCESS AT WALKWAYS AND VEHICULAR ACCESS AT PARKING LOT. TEMPORARY CONSTRUCTION FENCING SHALL BE CHAINLINK SET WITH MOVABLE BASES. MAINTAIN FENCING IN PLUMB CONDITION. DAMAGED FENCING OR SCREENING SHALL BE REPLACED IMMEDIATELY.
- ERECT AND MAINTAIN CONSTRUCTION FENCING AS CONSTRUCTION PHASING REQUIRES. SCHEDULE AND COORDINATE UTILITY, SIDEWALK, ROADWAY, AND STREETSCAPE WORK IN PUBLIC WAY TO MINIMIZE IMPACTS TO PUBLIC ACCESS AND PROTECT NEW WORK.
- EXCESS SOILS TO BE LEGALLY DISPOSED OF OFF SITE BY CONTRACTOR. DETERMINE VOLUME OF SOILS FOR EXPORT AND IMPORT TO MEET THE DESIGN INTENT AND DETAILING SET FORTH IN THIS DRAWING SET. PROVIDE ALL IMPORT SOIL PER PROJECT REQUIREMENTS.
- REMOVE AND DISPOSE OF ALL ITEMS TO COMPLETE THE REQUIRED IMPROVEMENT WORK WHETHER OR NOT EACH ITEM TO BE REMOVED HAS BEEN SPECIFICALLY NOTED.

**DEMOLITION LEGEND**

SYMBOL	DESCRIPTION	DETAIL
	REMOVE AND DISPOSE OF PAVING	
	REMOVE AND DISPOSE OF FENCE AND FOUNDATION	
	REMOVE AND DISPOSE OF TOPSOIL	

REVISIONS	DATE	DESCRIPTION

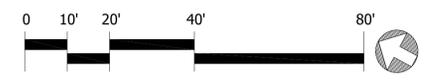


PREPARED BY: **RH**

PROJECT NO:  
DRAWN BY: **RH**  
CHECKED BY: **RH, BU**  
SCALE: **1"=20'-0"**

SUBMISSION:  
**100% CONSTRUCTION DOCUMENTS**

**MARCH 10, 2015**  
**LANDSCAPE DEMOLITION PLAN**





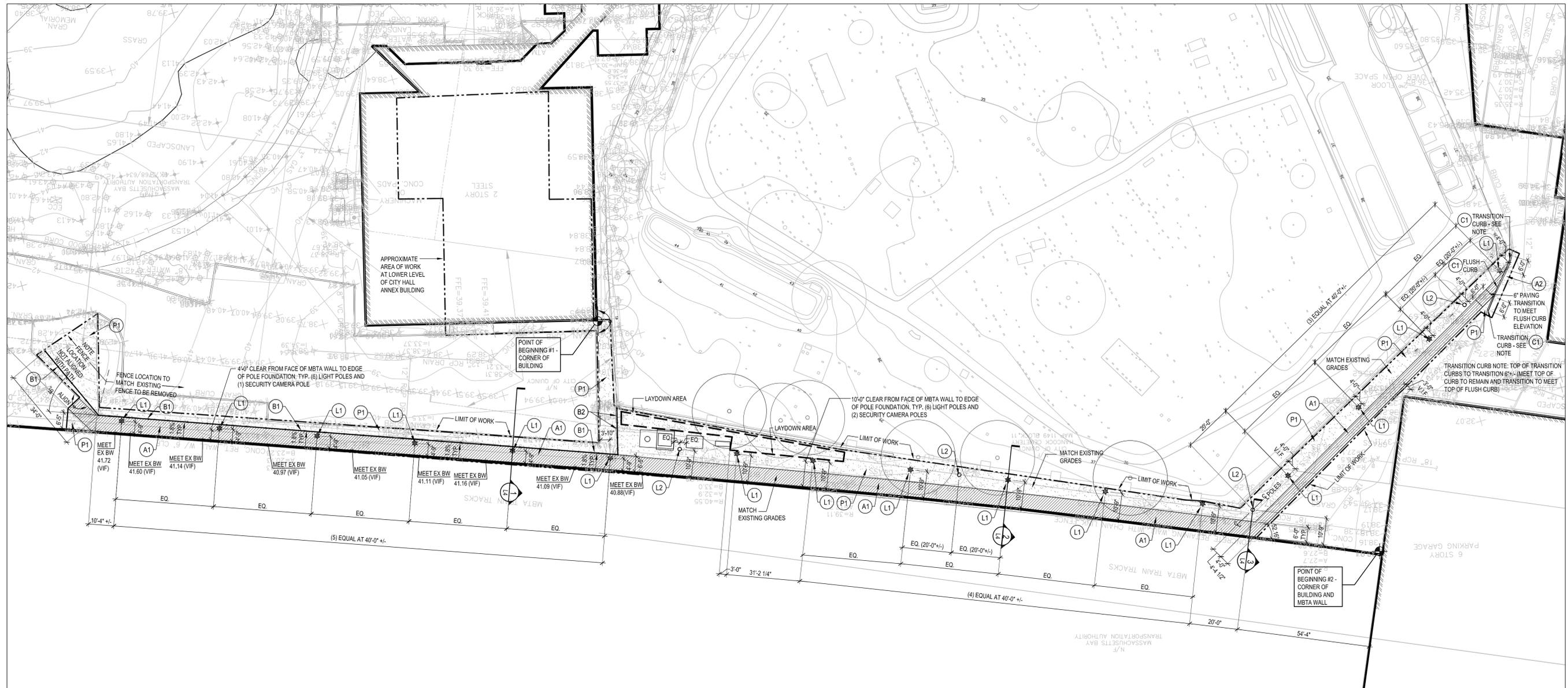
CITY OF QUINCY  
THOMAS P. KOCH, MAYOR

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**LIGHTING & SECURITY  
CAMERAS AT HANCOCK  
CEMETERY WALK**  
QUINCY, MA



**MATERIALS NOTES**

1. PROVIDE SUBMITTALS PRIOR TO PROCUREMENT OF MATERIALS.
2. SHOP DRAWINGS FOR CURBING, FENCING, PAVING, POLE LIGHTS AND POLE SECURITY CAMERAS SHALL BE BASED ON FIELD MEASUREMENT AND LAYOUT VERIFICATION.

**LAYOUT NOTES**

1. EXISTING CONDITIONS SURVEY WAS PROVIDED BY MICHAEL COLEMAN PLS, A-PLUS CONSTRUCTION SERVICES CORP, 17 ACCORD PARK DRIVE, SUITE 102, NORWELL, MA 02061.
2. REVIEW DRAWINGS TO DETERMINE THE TOTAL SCOPE AND COORDINATION OF WORK. EMPLOY A LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER TO VERIFY AND LAY OUT GRADES, LINES, AND DIMENSIONS SHOWN ON DRAWINGS. VERIFY EXISTING GRADES AND ELEVATIONS OF ADJACENT SITE CONDITIONS WITH ELEVATIONS ON DRAWINGS PRIOR TO BEGINNING WORK. REPORT DISCREPANCIES TO THE OWNERS REPRESENTATIVE IMMEDIATELY AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. USE ONE SINGLE BENCHMARK FOR WORK.
4. LINES ARE PARALLEL OR PERPENDICULAR TO LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE NOTED.
5. DIMENSIONS ARE TO FACE OF CURB, WALL FACE, EDGE, OR CENTERLINE OF IMPROVEMENT AS NOTED.
6. MEET EXISTING CONDITIONS FOR GRADING AT PROJECT LIMIT LINE SMOOTHLY.
7. STAKE PROPOSED CURBS, WALLS, FENCES, POLE LIGHTS, POLE SECURITY CAMERAS AND SITE ELEMENT LOCATIONS AND ELEVATIONS FOR OWNERS REPRESENTATIVES APPROVAL PRIOR TO INSTALLATION OF FOUNDATIONS.

**GRADING NOTES**

1. REVIEW DRAWINGS TO DETERMINE THE TOTAL SCOPE AND COORDINATION OF WORK. EMPLOY A LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER TO VERIFY AND LAY OUT GRADES, LINES, AND DIMENSIONS SHOWN ON DRAWINGS. VERIFY EXISTING GRADES AND ELEVATIONS OF ADJACENT SITE CONDITIONS WITH ELEVATIONS ON DRAWINGS PRIOR TO BEGINNING WORK. REPORT DISCREPANCIES TO THE OWNERS REPRESENTATIVE IMMEDIATELY AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.
2. GRADE EVENLY BETWEEN SPOT GRADES AS NOTED.
3. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE INSIDE OR OUTSIDE OF THE PROPERTY LINE AND LIMIT OF WORK LINE DUE TO CONSTRUCTION OPERATIONS.
4. USE ONE SINGLE BENCHMARK FOR WORK.
5. VERIFY EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
6. EXCAVATE BY HAND IN CLOSE PROXIMITY TO EXISTING UTILITIES, BUILDINGS, AND STRUCTURES.
6. RIM ELEVATIONS OF EXISTING DRAINAGE AND UTILITY STRUCTURES SHALL BE FLUSH WITH FINAL SURROUNDING GRADES SO NOT TO CAUSE A TRIP EDGE.
7. FINAL SHAPING OF EARTHWORK SHALL BE APPROVED IN THE FIELD BY OWNERS REPRESENTATIVE. OWNERS REPRESENTATIVE TO REVIEW AND APPROVE ROUGH GRADING BEFORE THE CONTRACTOR COMMENCES FINE GRADING AND LAYING OF TOPSOIL.
8. PITCH PAVEMENT TO PROVIDE POSITIVE DRAINAGE. NOTIFY OWNERS REPRESENTATIVE BEFORE PLACING PAVEMENT WITH A PITCH OF 4.5% OR GREATER. PAVEMENT CROSS PITCH SHALL NOT BE GREATER THAN 1.9% OR LESS THAN 0.75%.

**MATERIALS LEGEND**

SYMBOL	TAG	DESCRIPTION	DETAIL
<b>PAVING</b>			
	A1	BITUMINOUS CONCRETE PAVING - PEDESTRIAN	1 L3
	A2	BITUMINOUS CONCRETE PAVING - VEHICULAR - 6" DEPTH	1 L3  2 L3
<b>FENCES</b>			
	B1	METAL CHAIN LINK FENCE	3 L3
	B2	METAL CHAIN LINK GATE	5 L3
<b>CURBS</b>			
	C1	RESET GRANITE ROADWAY CURB	2 L3
<b>SITE LIGHTING AND ELECTRICAL</b>			
	L1	PARK POLE LIGHT - SEE ELECTRICAL DRAWING AND LIGHTING SCHEDULE	4 L3
	L2	PARK POLE SECURITY CAMERA - SEE ELECTRICAL DRAWING AND LIGHTING SCHEDULE	4 L3
<b>PLANTING</b>			
	P1	SEEDED LAWN	6 L3

REVISIONS  
DATE DESCRIPTION

REVISIONS	DATE	DESCRIPTION



PREPARED BY: RH

PROJECT NO:

DRAWN BY: RH

CHECKED BY: RH, BU

SCALE: 1"=20'-0"

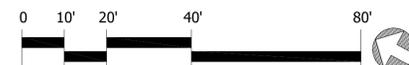
SUBMISSION:

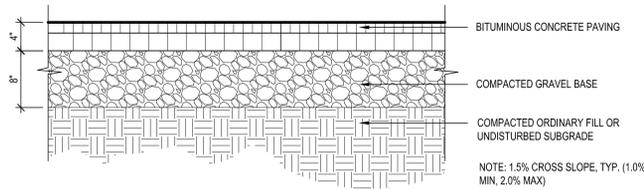
100% CONSTRUCTION DOCUMENTS

MARCH 10, 2015

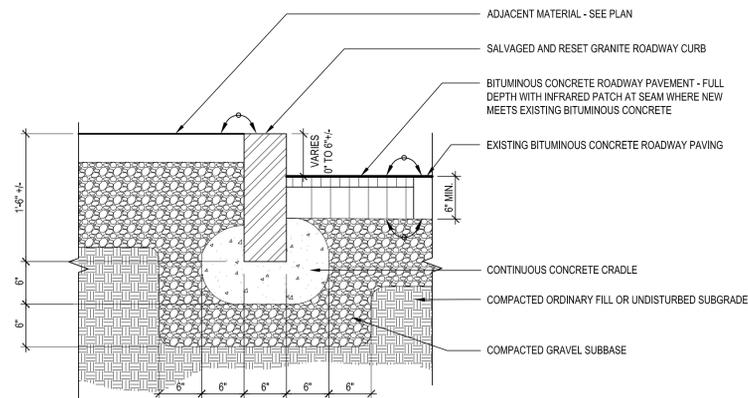
**MATERIALS  
LAYOUT AND  
GRADING PLAN**

**L2**

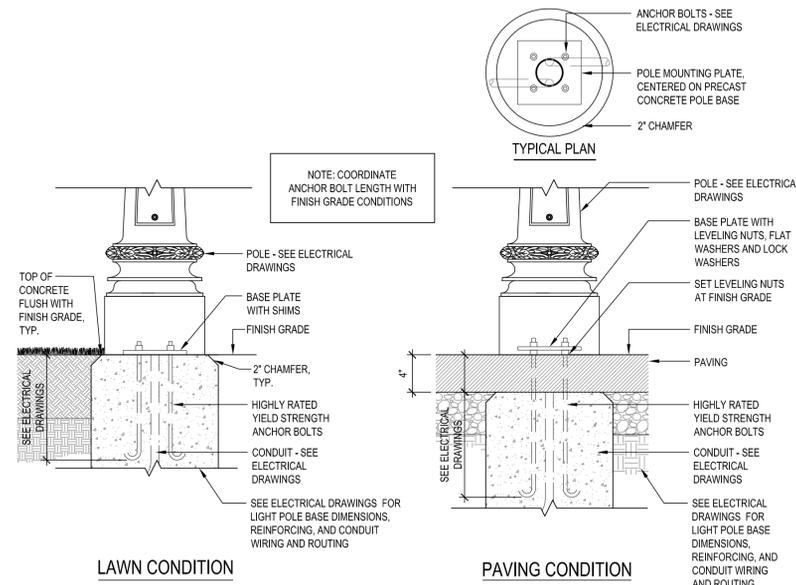




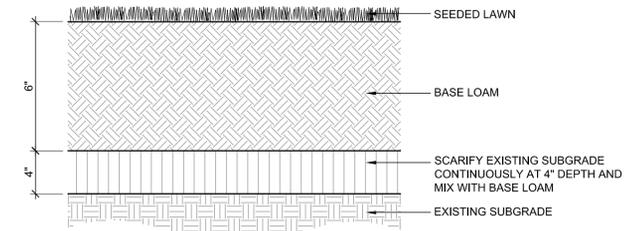
**1 BITUMINOUS CONCRETE PAVING - PEDESTRIAN**  
SCALE: 1" = 1'-0"



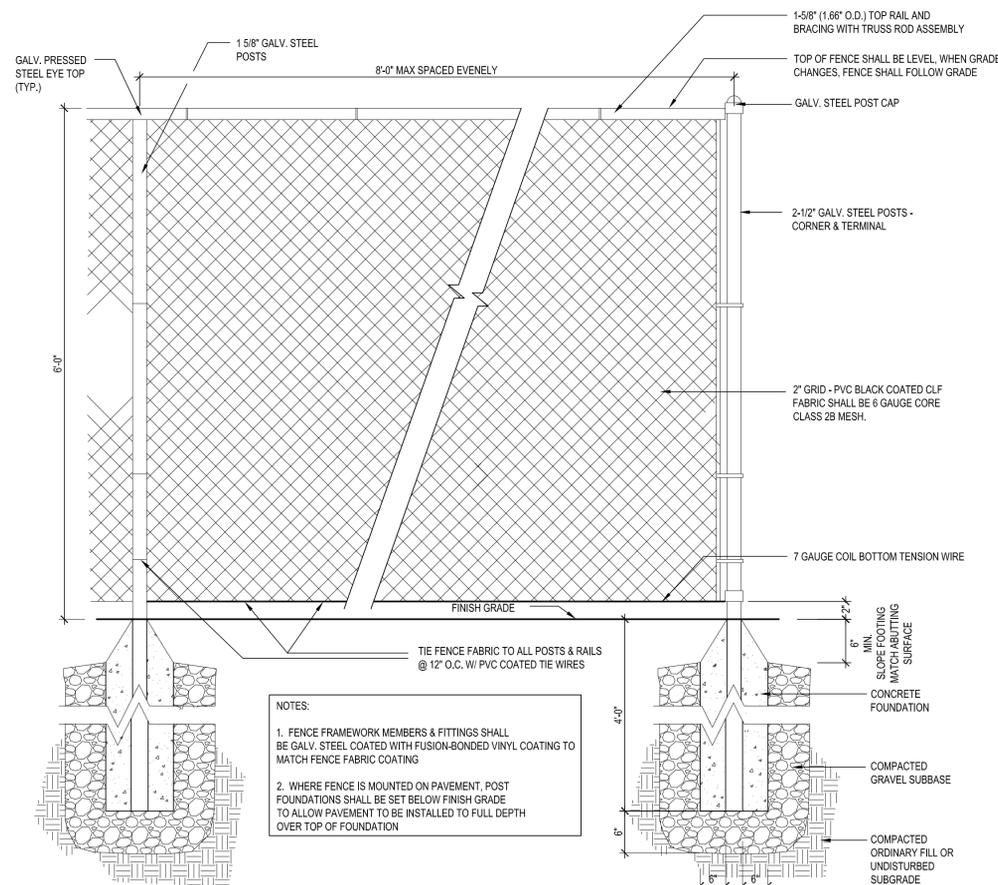
**2 RESET GRANITE ROADWAY CURB AND BITUMINOUS CONCRETE ROADWAY PAVING**  
SCALE: 1" = 1'-0"



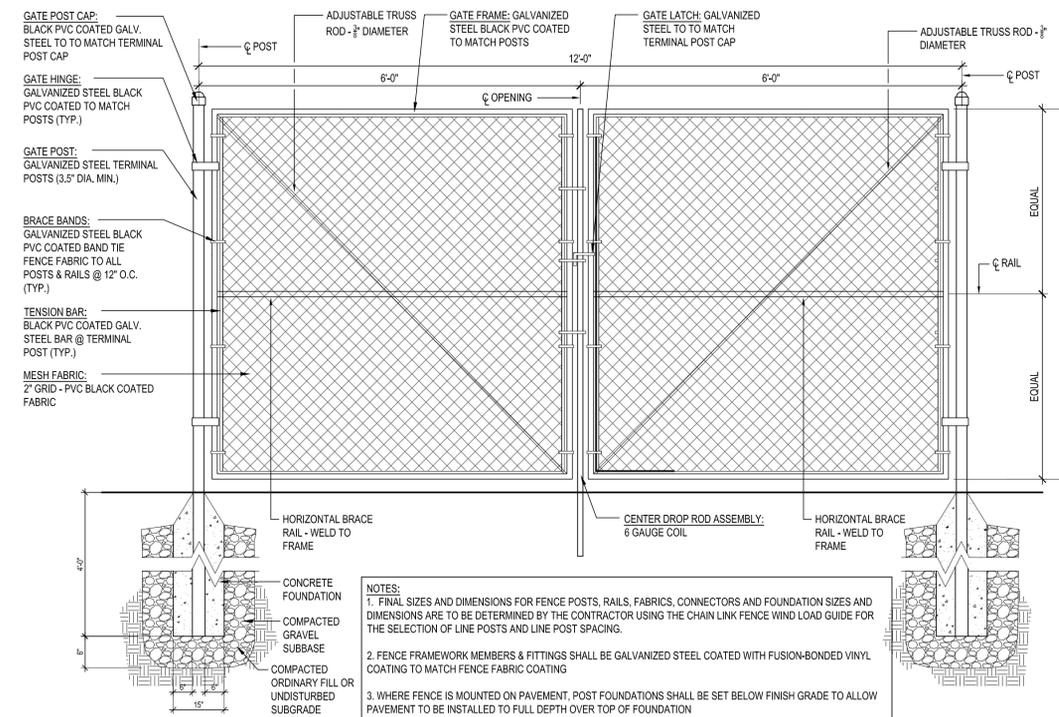
**4 POLE FOUNDATION - FINISH GRADE CONDITIONS**  
Scale: 3/4"=1'-0"



**6 SEEDING LAWN**  
SCALE: N.T.S.



**3 METAL CHAIN LINK FENCE**  
Scale: 1"=1'-0"



**5 METAL CHAIN LINK GATE**  
Scale: 3/4"=1'-0"



CITY OF QUINCY  
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**LIGHTING & SECURITY  
CAMERAS AT HANCOCK  
CEMETERY WALK**  
QUINCY, MA

REVISIONS	DATE	DESCRIPTION



PREPARED BY: RH  
PROJECT NO:  
DRAWN BY: RH  
CHECKED BY: RH, BU  
SCALE: AS NOTED

SUBMISSION:  
100% CONSTRUCTION DOCUMENTS  
MARCH 10, 2015

DETAILS  
**L3**



### BRANCH CIRCUITS SCHEDULE

120 OR 277 VOLT, 1Ø, 2W. CIRCUITS		120/208 & 277/480 VOLT, 3Ø, 4W. CIRCUITS	
CIRCUIT BREAKER	CONDUCTOR	CIRCUIT BREAKER	CONDUCTOR
20A -1P	2 #12 & 1 #12 GND. - 3/4".	15A -3P	4 #12 & 1 #12 GND. - 3/4".
30A -1P	2 #10 & 1 #10 GND. - 3/4".	20A -3P	4 #12 & 1 #12 GND. - 3/4".
40A -1P	2 #8 & 1 #10 GND. - 3/4".	30A -3P	4 #10 & 1 #10 GND. - 3/4".
50A -1P	2 #6 & 1 #10 GND. - 3/4".	40A -3P	4 #8 & 1 #10 GND. - 3/4".
60A -1P	2 #6 & 1 #10 GND. - 3/4".	50A -3P	4 #6 & 1 #10 GND. - 1".
		60A -3P	4 #6 & 1 #10 GND. - 1".

120/208 VOLT, 1Ø, 3W. CIRCUITS		208 OR 480 VOLTS, 3Ø, 3W. CIRCUITS	
CIRCUIT BREAKER	CONDUCTOR	CIRCUIT BREAKER	CONDUCTOR
20A -2P	3 #12 & 1 #12 GND. - 3/4".	20A -3P	3 #12 & 1 #12 GND. - 3/4".
30A -2P	3 #10 & 1 #10 GND. - 3/4".	30A -3P	3 #10 & 1 #10 GND. - 3/4".
40A -2P	3 #8 & 1 #10 GND. - 3/4".	40A -3P	3 #8 & 1 #10 GND. - 3/4".
50A -2P	3 #6 & 1 #10 GND. - 3/4".	50A -3P	3 #6 & 1 #10 GND. - 3/4".
60A -2P	3 #6 & 1 #10 GND. - 3/4".	60A -3P	3 #6 & 1 #10 GND. - 3/4".

208 VOLT 1Ø, 2W. CIRCUITS	
CIRCUIT BREAKER	CONDUCTOR
20A -2P	2 #12 & 1 #12 GND. - 3/4".
30A -2P	2 #10 & 1 #10 GND. - 3/4".
40A -2P	2 #8 & 1 #10 GND. - 3/4".
50A -2P	2 #6 & 1 #10 GND. - 3/4".
60A -2P	2 #6 & 1 #10 GND. - 3/4".

- BRANCH CIRCUIT SCHEDULE NOTES:**
- IF BRANCH CIRCUIT FEEDS ISOLATED GROUND OUTLETS OR EQUIPMENT (INDICATED AS 'IG'), PROVIDE TWO (2) GROUND CONDUCTORS.
  - WIRES SIZES INDICATED ARE MINIMUM. LARGER SIZES MAY BE REQUIRED TO OVERCOME VOLTAGE DROP. REFER TO SPECIFICATIONS.

### LUMINAIRE BRANCH CIRCUIT WIRING SCHEDULE

CONDUCTOR AWG.	MAXIMUM CONDUCTOR LENGTH AT 120 VOLTS	MAXIMUM CONDUCTOR LENGTH AT 277 VOLTS	GROUND CONDUCTOR AWG.
#12	75'-0"	175'-0"	#12
#10	120'-0"	285'-0"	#10
#8	190'-0"	445'-0"	#10
#6	300'-0"	---	#10

- LUMINAIRE BRANCH CIRCUIT WIRING SCHEDULE NOTES:**
- BASED ON 20 AMP CIRCUIT LOADED TO 12 AMP USING SINGLE PHASE, 2 WIRE CIRCUITS.
  - THE ABOVE SCHEDULE REPRESENTS MINIMUM CONDUCTOR SIZE BASED ON LENGTH OF CONDUCTOR FROM PANEL TO CENTER OF LOAD TO OVERCOME VOLTAGE DROP.
  - MAKE PROVISIONS FOR JUNCTION BOX ADJACENT TO OUTLET TO TRANSITION TO #12 WIRE FOR FINAL TERMINATIONS TO DEVICE AS REQUIRED.

### RECEPTACLE BRANCH CIRCUIT WIRING SCHEDULE

CONDUCTOR AWG.	MAXIMUM CONDUCTOR LENGTH AT 120 VOLTS	GROUND CONDUCTOR AWG.
#12	100'-0"	#12
#10	165'-0"	#10
#8	255'-0"	#10
#6	405'-0"	#10

- RECEPTACLE BRANCH CIRCUIT WIRING SCHEDULE NOTES:**
- BASED ON 20 AMP CIRCUIT LOADED TO 9 AMP USING SINGLE PHASE, 2 WIRE CIRCUITS.
  - THE ABOVE SCHEDULE REPRESENTS MINIMUM CONDUCTOR SIZE BASED ON LENGTH OF CONDUCTOR FROM PANEL TO CENTER OF LOAD TO OVERCOME VOLTAGE DROP.
  - MAKE PROVISIONS FOR JUNCTION BOX ADJACENT TO OUTLET TO TRANSITION TO #12 WIRE FOR FINAL TERMINATIONS TO DEVICE AS REQUIRED.

### 120 OR 277 VOLT, 1Ø, 2W. CIRCUITS

CIRCUIT BREAKER	CONDUCTOR
20A -1P	2 #12 & 1 #12 GND. - 3/4".
30A -1P	2 #10 & 1 #10 GND. - 3/4".
40A -1P	2 #8 & 1 #10 GND. - 3/4".
50A -1P	2 #6 & 1 #10 GND. - 3/4".
60A -1P	2 #6 & 1 #10 GND. - 3/4".

### 208 VOLT 1Ø, 2W. CIRCUITS

20A -2P	2 #12 & 1 #12 GND. - 3/4".
30A -2P	2 #10 & 1 #10 GND. - 3/4".
40A -2P	2 #8 & 1 #10 GND. - 3/4".
50A -2P	2 #6 & 1 #10 GND. - 3/4".
60A -2P	2 #6 & 1 #10 GND. - 3/4".

### 120/208 VOLT, 1Ø, 3W. CIRCUITS

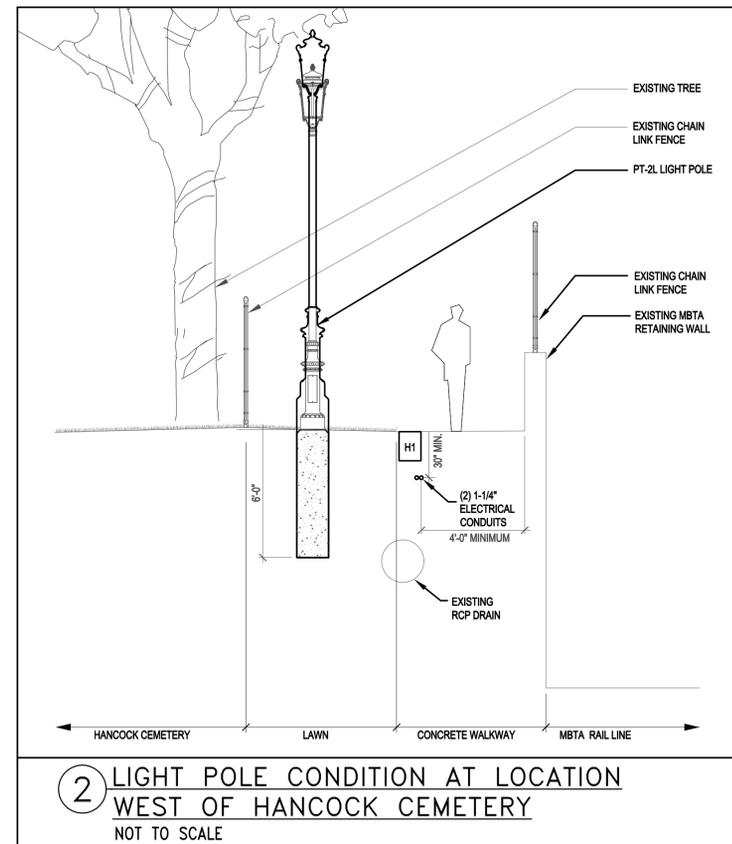
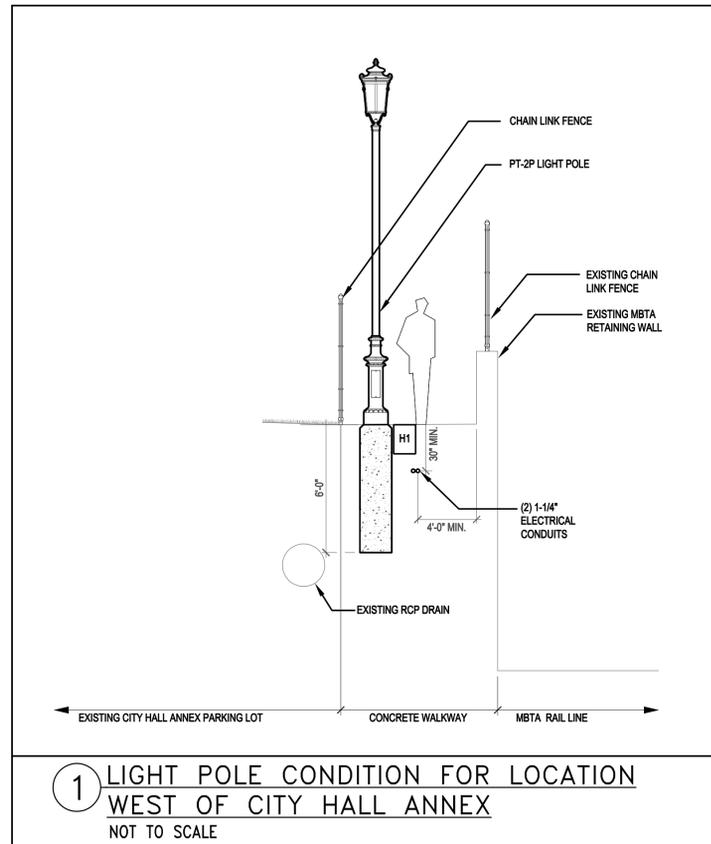
20A -2P	3 #12 & 1 #12 GND. - 3/4".
30A -2P	3 #10 & 1 #10 GND. - 3/4".
40A -2P	3 #8 & 1 #10 GND. - 3/4".
50A -2P	3 #6 & 1 #10 GND. - 3/4".
60A -2P	3 #6 & 1 #10 GND. - 3/4".

### 208 OR 480 VOLTS, 3Ø, 3W. CIRCUITS

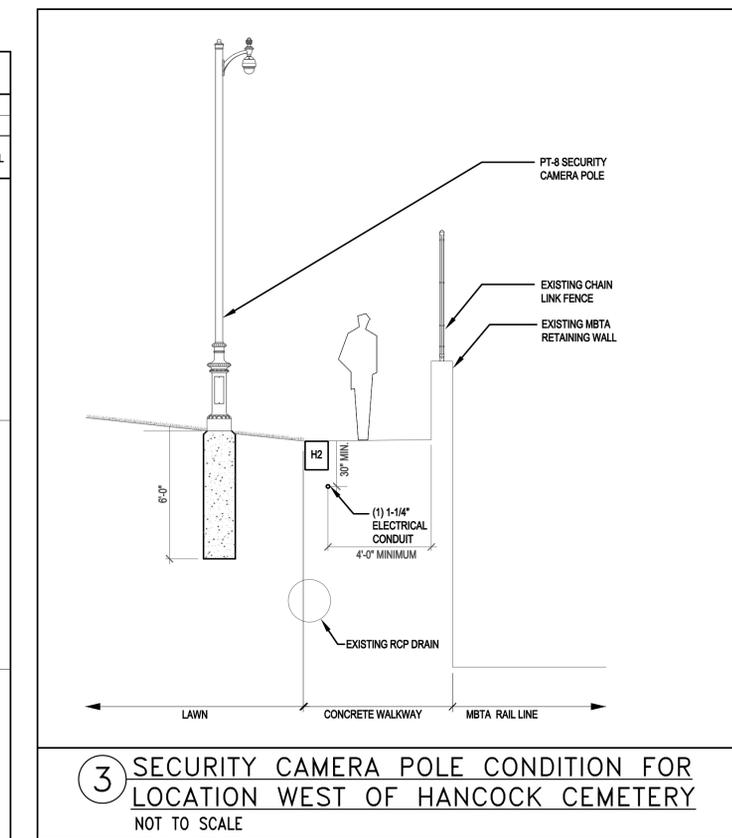
20A -3P	3 #12 & 1 #12 GND. - 3/4".
30A -3P	3 #10 & 1 #10 GND. - 3/4".
40A -3P	3 #8 & 1 #10 GND. - 3/4".
50A -3P	3 #6 & 1 #10 GND. - 3/4".
60A -3P	3 #6 & 1 #10 GND. - 3/4".

### 120/208 & 277/480 VOLT, 3Ø, 4W. CIRCUITS

15A -3P	4 #12 & 1 #12 GND. - 3/4".
20A -3P	4 #12 & 1 #12 GND. - 3/4".
30A -3P	4 #10 & 1 #10 GND. - 3/4".
40A -3P	4 #8 & 1 #10 GND. - 3/4".
50A -3P	4 #6 & 1 #10 GND. - 1".
60A -3P	4 #6 & 1 #10 GND. - 1".



LUMINAIRE SCHEDULE					
PROVIDE LUMINAIRES COMPLETE WITH ACCESSORIES TO MEET JOB CONDITIONS					
TYPE	LAMPS		MANUFACTURER & CATALOG No.	REMARKS	ALT. EQUAL
	No.	TYPE			
PT-2L	1	LED	NERI # FIXTURE: PN60L-02-1-P3-02(QTY 1)-MOD(PAINT LED TRAY BLACK); POLE: 1191.050-GFCI (18" FROM TOP) - ACCESS PANEL (1@180 DEGREES TO GFCI, 18" FROM TOP) - PHOTOCELL (8" FROM BOTTOM, CAST SHIELD); TOP ADAPTER: 4100.050; BASE: 'NASHUA' 1320. DESCRIPTION: SINGLE HEADED PEDESTRIAN POST-TOP.	LOCATION: SITE. 1. 'L' SUFFIX DESIGNATES INSTALLATION IN LAWN CONDITION. SEE LANDSCAPE ARCHITECTS DETAILS FOR INSTALLATION DIFFERENCES. 2. INSTALL PER LANDSCAPE ARCHITECTS DRAWINGS AND DETAILS. 3. PROVIDE IN DARK GRAY/BLACK FINISH. 4. PROVIDE LEDS IN 3,000K COLOR TEMPERATURE. 5. MANUFACTURER TO PAINT OUT LED HOUSING TRAY TO MATCH FIXTURE: GRAY/BLACK FINISH. 6. MANUFACTURER TO PROVIDE WITH GFCI OUTLET AT TOP OF POLE, 18" DOWN. 7. MANUFACTURER TO PROVIDE WITH ACCESS PANEL AT TOP OF POLE, LOCATED 18" DOWN. ACCESS PANELS TO BE 180 DEGREES FROM GFCI OUTLET. 8. MANUFACTURER TO PROVIDE WITH LOCAL PHOTOCELL CONTROL. 9. PHOTOCELL TO BE LOCATED 8" FROM BOTTOM OF POLE AND HAVE A CAST CURVED SHIELD ABOVE IT TO PREVENT FALSE ON / OFF TRIGGERS FROM THE LIGHT SOURCE.	-
PT-2P	1	LED	NERI # FIXTURE: PN60L-02-1-P3-02(QTY 1)-MOD(PAINT LED TRAY BLACK); POLE: 1191.050-GFCI (18" FROM TOP) - ACCESS PANEL (1@180 DEGREES TO GFCI, 18" FROM TOP) - PHOTOCELL (8" FROM BOTTOM, CAST SHIELD); TOP ADAPTER: 4100.050; BASE: 'NASHUA' 1320. DESCRIPTION: SINGLE HEADED PEDESTRIAN POST-TOP.  PROVIDE EXTENDED ANCHOR BOLTS FOR TYPE PT-2P FOR EXTENSION THROUGH PAVING, PROVIDE AN ADDITIONAL 8" OF ANCHOR BOLTS. ANCHOR BOLTS SHALL BE CUT AS NEEDED IN THE FIELD TO ALLOW PROPER SITTING OF BASE TO FINISHED GRADE.	LOCATION: SITE. 1. 'L' SUFFIX DESIGNATES INSTALLATION IN LAWN CONDITION. SEE LANDSCAPE ARCHITECTS DETAILS FOR INSTALLATION DIFFERENCES. 2. INSTALL PER LANDSCAPE ARCHITECTS DRAWINGS AND DETAILS. 3. PROVIDE IN DARK GRAY/BLACK FINISH. 4. PROVIDE LEDS IN 3,000K COLOR TEMPERATURE. 5. MANUFACTURER TO PAINT OUT LED HOUSING TRAY TO MATCH FIXTURE: GRAY/BLACK FINISH. 6. MANUFACTURER TO PROVIDE WITH GFCI OUTLET AT TOP OF POLE, 18" DOWN. 7. MANUFACTURER TO PROVIDE WITH ACCESS PANEL AT TOP OF POLE, LOCATED 18" DOWN. ACCESS PANELS TO BE 180 DEGREES FROM GFCI OUTLET. 8. MANUFACTURER TO PROVIDE WITH LOCAL PHOTOCELL CONTROL. 9. PHOTOCELL TO BE LOCATED 8" FROM BOTTOM OF POLE AND HAVE A CAST CURVED SHIELD ABOVE IT TO PREVENT FALSE ON / OFF TRIGGERS FROM THE LIGHT SOURCE.	-
PT-8	-	-	NERI # POLE: 1320.601.K3.5T, 18.25' - ACCESS PANEL (1@180 DEGREES TO CAMERA ARM); TOP COVER: 4100.050-MOD; BASE: 'NASHUA' 1320; CAMERA ARM: SPRING CITY VINEYARD # AARVNY-15-17.5-15-TNCAA-MIMER-CU; CAMERA: DVTCL # QUASAR 1080P-PTZ-CP-4221 (BLACK). DESCRIPTION: POST-TOP WITH CAMERA.	LOCATION: SITE. 1. 'L' SUFFIX DESIGNATES INSTALLATION IN LAWN CONDITION, 'P' SUFFIX DESIGNATES INSTALLATION ON PAVING CONDITION. SEE LANDSCAPE ARCHITECTS DETAILS FOR INSTALLATION DIFFERENCES. 2. INSTALL PER LANDSCAPE ARCHITECTS DRAWINGS AND DETAILS. 3. PROVIDE IN DARK GRAY/BLACK FINISH. 4. MANUFACTURER TO PROVIDE WITH MODIFIED POLE TO ALLOW MOUNTING OF CAMERA, AS SPECIFIED IN CONTRACT DOCUMENTS. 5. MANUFACTURER TO PROVIDE CAMERA ARM, AS SPECIFIED. 6. CAMERA TO BE PROVIDED IN BLACK FINISH, OR PAINTED OUT IN FIELD TO MATCH POLE. 7. MANUFACTURER TO PROVIDE WITH ACCESS PANEL AT TOP OF POLE, AT SAME HEIGHT AS CAMERA ARM MOUNTING. ACCESS PANELS TO BE 180 DEGREES FROM CAMERA ARM.	-



### LUMINAIRE AND OUTLET

- POLE MOUNTED

### SWITCHES AND CONTROLS

- CENTERLINE 4'-0" ABOVE FINISHED FLOOR (A.F.F.). REFER TO SPECIFICATIONS FOR MANUFACTURER AND CATALOG NUMBER. "K" INDICATES KEY OPERATED.)
- ⏻ TIME SWITCH.

### RACEWAYS AND WIRING

- (REFER TO SPECIFICATIONS FOR GROUND WIRE(S) NOT SHOWN ON DRAWINGS)  
(REFER TO SPECIFICATIONS FOR WIRE AND HOMERUN REQUIREMENTS.)
- LH1-1,3 HOMERUN TO PANEL "LH1", CIRCUITS 1 AND 3. DIAGONAL LINES INDICATE NUMBER OF CONDUCTORS WHEN MORE THAN TWO.

### MISCELLANEOUS

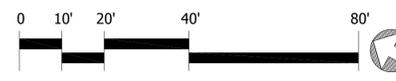
- PANELBOARD.
- ⏻ DISCONNECT SWITCH - FUSED.
- ⏻ DISCONNECT SWITCH - UNFUSED.
- Ⓜ HANDHOLE
- Ⓜ HANDHOLE
- Ⓜ PULLBOX - SIZED PER CODE.
- JUNCTION BOX - CEILING MOUNTED.
- JUNCTION BOX - WALL MOUNTED.
- Ⓜ PHOTO SENSOR.

### PARTIAL LIST OF ABBREVIATIONS AND SUBSCRIPTS

- WP WEATHERPROOF
- R EXISTING TO BE REMOVED
- E EXISTING TO REMAIN
- UP UTILITY POLE

### DRAWING LIST

DWG. No.	DRAWING NAME:	SHEET No.
E0	ELECTRICAL LEGEND AND DETAILS	1 of 2
E1	ELECTRICAL SITE PLAN	2 of 2



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**LIGHTING & SECURITY CAMERAS AT HANCOCK CEMETERY WALK**  
QUINCY, MA

REVISIONS  
DATE DESCRIPTION



PREPARED BY: AKL  
**TAKIP** Consulting Engineers Inc.  
32 Temple Place, Boston, Massachusetts 02111-1506  
TEL: 617-351-0500 FAX: 617-351-5188  
PROJECT NO: 13-2593-10  
DRAWN BY: AKL  
CHECKED BY: KJA  
SCALE: NONE

SUBMISSION:  
100% CONSTRUCTION DOCUMENTS

MARCH 10, 2015  
**ELECTRICAL LEGEND AND DETAILS**



CITY OF QUINCY  
THOMAS P. KOCH, MAYOR

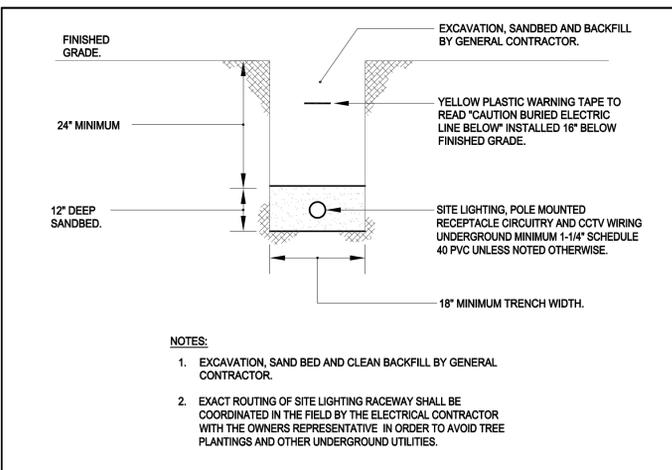
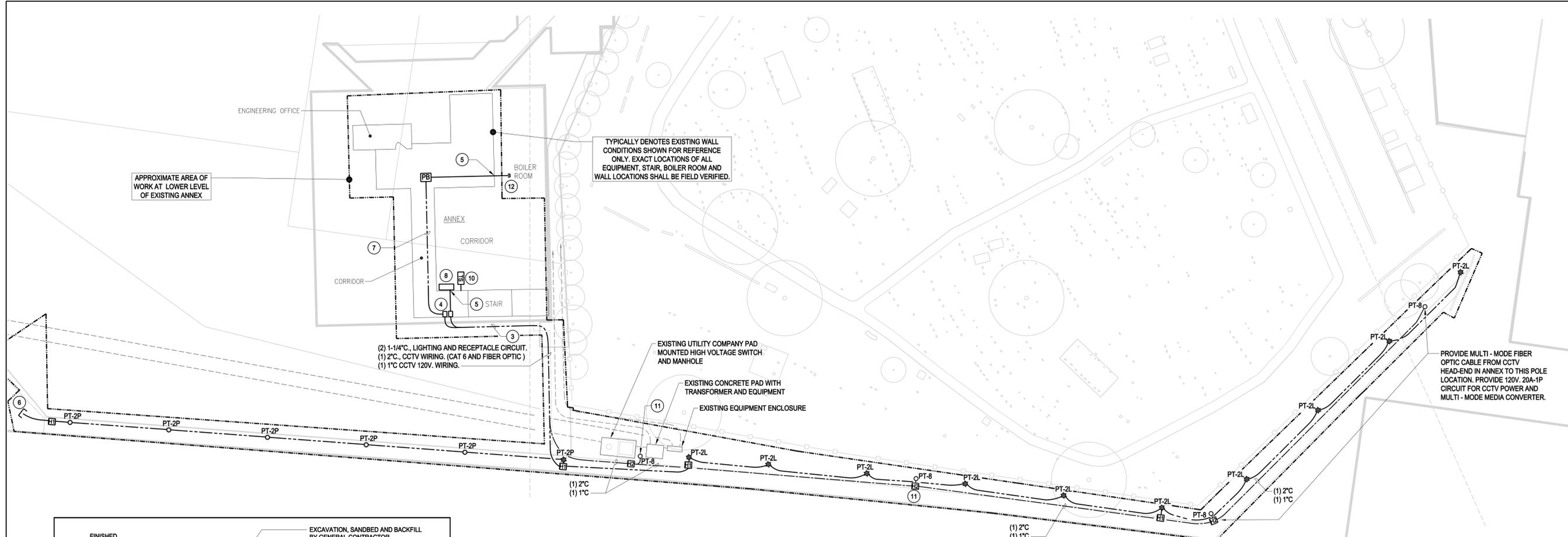
PLANNING AND COMMUNITY DEVELOPMENT  
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(617) 376-1362

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LANDSCAPE ARCHITECTURE

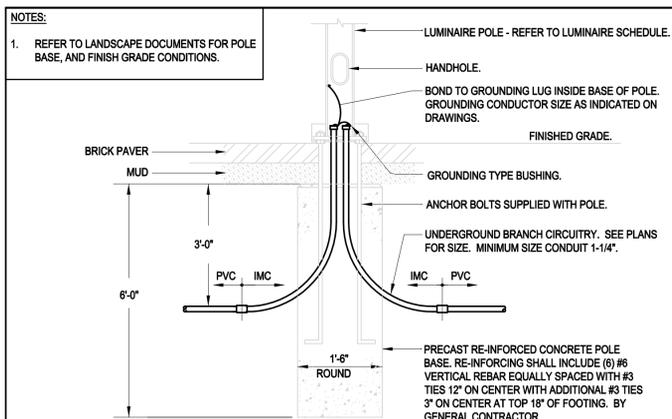
80 CONSTRUCTION BY: 02/15/15  
DESIGNED BY: 02/15/15  
WWW.HALVORSONDESIGN.COM

# LIGHTING & SECURITY CAMERAS AT HANCOCK CEMETERY WALK

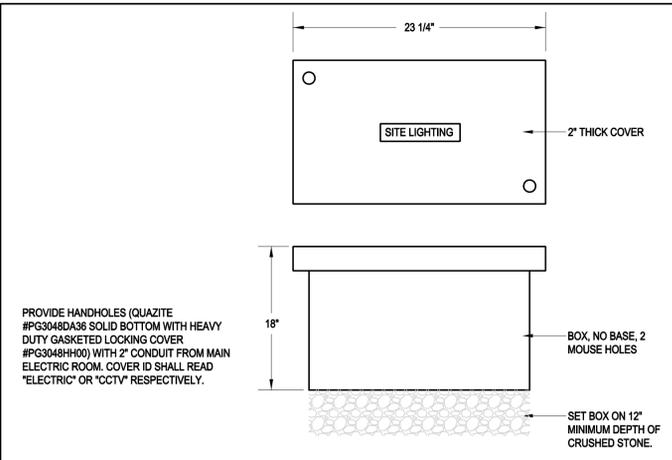
QUINCY, MA



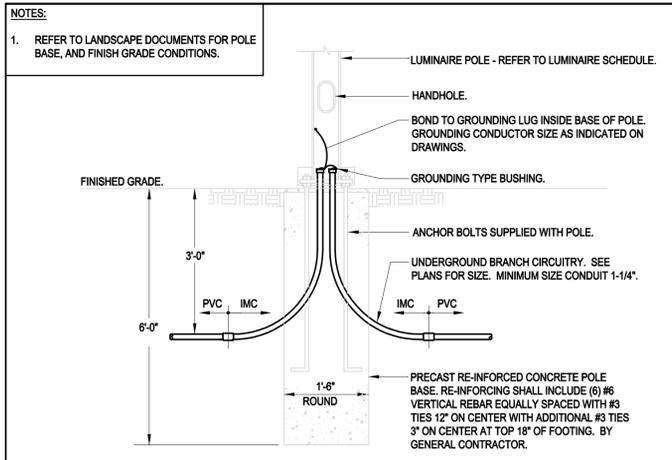
**SITE LIGHTING DUCTBANK SECTION DETAIL**  
Scale: Not To Scale



**PT-2P PRECAST POLE BASE DETAIL**  
Scale: Not To Scale

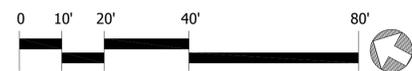


**SITE LIGHTING HANDHOLE DETAIL**  
Scale: Not To Scale



**PT-2L PRECAST POLE BASE DETAIL**  
Scale: Not To Scale

- SITE PLAN NOTES:**
- ALL PT-2L AND PT-2P LUMINAIRE LOCATIONS SHALL BE COORDINATED WITH LANDSCAPE DOCUMENTS.
  - ALL SITE LIGHTING AND POLE MOUNTED GFI RECEPTACLE BRANCH CIRCUITRY SHALL BE MINIMUM #4AWG UNLESS NOTED OTHERWISE OR LARGER WHERE REQUIRED BY VOLTAGE DROP.
  - TRENCH BETWEEN BUILDING FOUNDATION AND PARKING AREA CONFIRM ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATING. INCLUDE 10'L x 2"W SAW CUTTING AND REMOVAL OF EXISTING CONCRETE SIDEWALK AND PATCHING OF CONCRETE. PROVIDE PATCHING OF EXISTING, REFER TO CONCRETE SPECIFICATIONS. FINAL PATCH SHALL BE APPROVED BY OWNER REPRESENTATIVE.
  - CORE DRILL FOUNDATION WALL FOR PASSAGE OF SITE CONDUITS. PROVIDE WATERPROOFING SLEEVES ON ALL CONDUITS. PROVIDE PULLBOXES AT BASEMENT LEVEL FOR POWER AND CCTV RACEWAYS AND WIRING. RACEWAYS THROUGH FOUNDATION SHALL BE RIGID STEEL.
  - PROVIDE MINIMUM 3" CORE THROUGH CMU / CONCRETE WALL, FIRE PROOF ALL OPENINGS.
  - EXTEND (2) 2" CONDUITS A MINIMUM 10' FROM HANDHOLE, GAP AND STAKE.
  - CONDUIT RUNS AT LOWER LEVEL ARE TO BE RUN EXPOSED ON EXISTING CEILINGS AND/OR HIGH ON WALLS. INCLUDE ALL REQUIRED CORING OF EXISTING WALLS AND PAINTING OF EXPOSED CONDUITS.
  - APPROXIMATE LOCATION OF EXISTING PANELBOARD AND CCTV HEAD-END EQUIPMENT. UTILIZE EXISTING 120/208V. PANELBOARD TO SERVE SITE LIGHTING LUMINAIRES, GFI RECEPTACLES AND CCTV POWER. PROVIDE (4) 20A-1P CIRCUIT BREAKERS TO MATCH EXISTING PANELBOARD MANUFACTURER AND AIC RATINGS. UTILIZE (1) 20A-1P CIRCUIT BREAKER TO SERVE ALL SITE LUMINAIRES, RUN CIRCUIT VIA PHOTO SENSOR AND NEW TIME SWITCH. UTILIZE (2) 20A-1P CIRCUIT BREAKERS TO SERVE POLE MOUNTED GFI RECEPTACLES, (8) POLE MOUNTED GFI RECEPTACLES PER CIRCUIT. UTILIZE (1) 20A-1P CIRCUIT BREAKER FOR CCTV POWER.
  - NOT USED.
  - NEW TIME SWITCH, LOCATE ADJACENT EXISTING PANELBOARD.
  - PROVIDE INDIVIDUAL CAT6 CABLE AND 120V, 20A-1P CIRCUIT TO THIS POLE LOCATION FROM CCTV HEAD-END IN ANNEX.
  - TERMINATE 2" FOR CCTV WIRING WITH INSULATED BUSHING. COORDINATE EXACT LOCATION OF ROUTING AND TERMINATE WITH ALL EXISTING RACEWAYS AND PIPING AT BASEMENT CEILING.



REVISIONS	DESCRIPTION
DATE	



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 (617) 351-1356 ©2015 TKP Consulting Engineers

PROJECT NO: 13-2593-10  
 DRAWN BY: AKL  
 CHECKED BY: KJA  
 SCALE: 1" = 20'-0"

SUBMISSION:  
 100% CONSTRUCTION DOCUMENTS

MARCH 10, 2015  
**ELECTRICAL SITE PLAN**