



# Town of W Boylston WBMLP EV Charging Stations W Boylston, Massachusetts

Prepared by  
**Davis Architects**

Goodale Road Parking Lot  
W Boylston Massachusetts 01583  
**Project Number 2022.EV**

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# WEST BOYLSTON MUNICIPAL LIGHTING PLANT

4 Crescent Street, West Boylston, Massachusetts 01583

Telephone (508) 835-3681

## LEGAL NOTICE:

## INVITATION FOR BID:

**Project Description:** Site excavation and utility trenching at Goodale Park parking lot in West Boylston, MA., installation of concrete pier and slab with integral curb for installation of WBMLP-purchased, dual Level III electric vehicle (EV) charging stations. An additional concrete pad shall be installed for electric meter purchased by WBMLP. Electrician shall wire underground conductors, communication service from existing telephone pole to the dual EV charging stations, disconnect switch. Install removable bollards in concrete slab. Site clean-up includes installation of drainage crushed stone bed, soil and topsoil backfill and re-seeding of affected area and painting of parking bays within scope of work.

*Electronic bids will be received at the West Boylston Municipal Light Plant, to the attention of:*

**Jon Fitch, General Manager, Email: [jfitch@wbmlp.org](mailto:jfitch@wbmlp.org) until 2:00 PM on Thursday, November 10, 2022** for the purpose of providing **General Contracting Bids** for the **West Boylston GoodalePark EV Charging Stations**.

At such time and place said bids shall be publicly opened.

Request for Bid Conditions, Documents and Instructions to Bidders may be obtained from the Contact: Jonathan Fitch, General Manager, WBMLP, [jfitch@wbmlp.org](mailto:jfitch@wbmlp.org)

A non-mandatory site walk-through is planned for: **Tuesday November 1, 2022 at 10:00AM**, at the Goodale Park parking lot, located at the corner of Crescent Street and Goodale Street, West Boylston, MA.

Any contract issued in response to a successful bid must be approved by the Board of Commissioners, West Boylston Municipal Lighting Plant (WBMLP). WBMLP reserves the right to reject any or all bids.

# **WBMLP: Goodale Park EV Charging Stations**

WBMLP 4 Crescent Street, West Boylston, Massachusetts 01583

Telephone (508) 835-3681

## **INVITATION FOR BID West Boylston Municipal Light Plant Goodale Park EV Charging Stations Installation**

The General Manager of WBMLP invites Qualified Bidders to submit bids to provide:

- General Building Construction Services
- Electrical

**SCOPE OF WORK:** The full scope of work is attached hereto and in Appendix A-F.

**PROJECT WEBSITE:** West Boylston Municipal Light Plant will be disseminating bid documents through an on-line bidding and retrieval system. During construction, the Architect will provide a file sharing website for communication, shop drawings and submittals.

### **TIME AND PLACE FOR SUBMITTING QUALIFICATIONS & BIDS:**

West Boylston Municipal Light Plant, 4 Crescent Street W. Boylston, MA, 01583 (508)-835-3681

**Please submit electronic copies.** Electronic versions are the preferred method of receiving bids. Bid submission may be made to the attention of:

**WBMLP Contact:** Jonathan Fitch, General Manager, 508-835-3681, [jfitch@wbmlp.org](mailto:jfitch@wbmlp.org)

**Bids Due:** **Thursday, November 10, 2022 at 2:00 PM**

**PRE-BID SITE VISIT:** **Tuesday November 1<sup>st</sup> 2022, at 10AM**

Goodale Park parking lot, located at the corner of Crescent Street and Goodale Street, West Boylston, MA.

**FORM OF PROPOSED CONTRACT:** Unless otherwise specified, the WBMLP, Standard General Contract shall be used, a draft of which contract is enclosed herein.

**TIMETABLE:** The Town endeavors to expedite all contracts within a timely fashion. Typically, contract will be awarded within 30 days of the bid opening if not sooner, and services under the contract will commence by November 17<sup>th</sup>, 2022.

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**BID REQUIREMENTS:** At a minimum, bids submitted hereunder must include the following:

1. All forms contained within this *Invitation For Bid* package including:

**Required Bid Form for General Contractor Services**

**Certificate of Non-Collusion**

**Certificate of Tax Compliance**

**Certificate of Authority**(if a corporation)

**Labor Harmony and OSHA Training Certificate**

2. Relevant engagements, for last three (3) years, Construction Supervisor license level(resume, bidder qualification information, etc.).
3. Any exceptions taken to the conditions or specifications cited herein must be clearly stated on a separate page of the bid.

**CONTRACT REQUIREMENTS:** WBMLP will award contract to lowest responsible and eligible bidder. Bidder shall take notice of all applicable appendix.

1. Appendix A: Site Plans with Instructions and Electrical One-Line Drawing
2. Appendix B: ChargePoint CPE250-CMT Installation Guide on Pad with Conduits
3. Appendix C: ChargePoint CPE-250 Site Design and Installation Guide
4. Appendix D: Metering and Distribution Pedestal Specification
5. Appendix E: Removable Steel Bollard
6. Appendix F: Prevailing Wage Schedule

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## INSTRUCTIONS TO BIDDERS

### 1.1 Introduction

1.1 The West Boylston Municipal Lighting Plant (WBMLP), (hereinafter referred to as “Owner” or “Awarding Authority”), is seeking sealed bids for the installation of dual Level III electric vehicle (EV) charging stations and control meter, within existing parking lot. Specifications and drawings for the project are set forth in Appendix A.

1.2 The construction schedule for this Project is as soon as practical. The General Contractor shall state in writing what date they are committed to starting work by.

### 2.0 Submittal Deadline

2.1 All Bids shall be submitted to the West Boylston Municipal Lighting Plant (WBMLP), 4 Crescent Street, West Boylston, MA 01583, Attention: General Manager.

General Contracting Bids Due: **Thursday, November 10, 2022 at 2:00 PM**

Bids received after that deadline will not be accepted.

### 3.0 Submittal Procedure

3.1 All Bids shall be submitted exactly as follows. Each Bid shall be sent via email to: **Jon Fitch, General Manager, Email: [jfitch@wbmlp.org](mailto:jfitch@wbmlp.org)**  
*Email heading: "WBMLP Goodale Park EV Charging Stations"* and contain the name and address of the Bidder.

3.2 No Bid may be amended or withdrawn after the submittal deadline. Bids that are incomplete, improperly endorsed or otherwise improperly completed may be rejected. The bid shall be held up to **sixty (60)** days

3.3 With its Bid, each Bidder shall include the following:

Required Bid Form for General Contractor Services,

Certificate of Non-Collusion; (chapter 30B s.10)

Statement of current Tax Compliance;

Certificate of Authority (if a corporation)

Labor Harmony and OSHA Training Certificate

Relevant engagements, for last three (3) years, Construction Supervisor license level (resume, bidder qualification information, etc.).

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Any exceptions taken to the conditions or specifications cited herein must be clearly stated on a separate page of the bid.

## 4.0 Opening and Review of Bids: G.L. c. 149, Sec. 44E(4)

4.1 All Bids shall be opened and evaluated in accordance with G.L. c. 149, Sec. 44E(4). The Awarding Authority shall determine the most advantageous Bid from the responsible, responsive, and eligible Bidders. The successful Bidder shall possess the skill, ability and integrity necessary for the faithful performance of the Contract. A determination of most advantageous shall include but not be limited to the consideration of the quality of the Bidder's proposed buildings and appurtenances, its conformance with these specifications, and completeness of its Bid.

4.2 The Owner shall consider all the criteria, including but not limited to that of cost and as set forth in the evaluation criteria section of these Contract Documents.

4.3 The Owner reserves the right to reject any or all Bids and to determine the Bid deemed in the best interest of Owner. The Owner may waive minor informalities or allow a Bidder to correct them to the extent allowed by law.

## 5.0 Bidder's Duty to Review, Investigate, Study

5.1 The parking lot site is located at the corner of Crescent Street and Goodale Street, West Boylston MA 01583

5.2 Bidders are responsible for obtaining a complete set of Contract Documents, including any addenda, in preparing their Bids.

5.3 Before submitting a Bid, each potential Bidder shall make a careful study of all documents, the site, and conduct any other examination or investigation it deems appropriate to fully assure itself as to the conditions of the site and requirements of the Project. The Bidder is entirely responsible for the requirements of federal, state and local law, including any particular requirements applicable to electric plants. The Owner does not make any warrantee or guarantee regarding the accuracy or completeness of these Contract Documents or any other Municipal Documents, including but not limited to the condition of the site. Bidders shall rely on their own examination. Bidders may not rely upon oral information provided by any town official, employee or agent.

5.4 The Bidder shall promptly notify the WBMLP General Manager of any and all conflicts, errors or discrepancies in the Contract Documents and such other municipal documents as are incorporated therein or otherwise related to this Project.

5.5 If the Bidder has any questions about the specifications or terms contained herein, such questions must be made in writing prior to submitting a Bid and directed to the WBMLP General Manager. No questions shall be entertained after the Bid opening.

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## 6.0 Pre-Bid Site Visit

- 6.1 A non-mandatory site walk-through is planned for: **Tuesday November 1<sup>st</sup> 2022, at 10:00AM**, at the Goodale Park parking lot, located at the corner of Crescent Street and Goodale Street, West Boylston, MA. Prospective bidders are encouraged to attend.

## 7.0 Qualifications of Bidders

- 7.1 In order that an equal uniform comparison and determination of responsiveness may be made, all Bids shall be submitted in the format provided, outlined herein. Standard Bids shall not be considered in lieu of the Bid format herein required. The Owner shall not be responsible to decipher a Bidder's documentation to determine compliance with all items required herein.
- 7.2 Determination of the most advantageous Bidder shall be based generally on the Bidder's responsiveness, experience and commitment to the terms and conditions contained in this Request for Bids and the Bidder's demonstrated capability to perform the Work within its Bid Price.
- 7.3 The Owner may interview or conduct such investigation as it deems necessary to assist in the evaluation of the Bids and to establish the responsibility, qualifications, and financial ability of the Bidders to perform and furnish the work in accordance with the Contract Documents.
- 7.4 By signing and submitting its Bid, the Bidder agrees to all terms and conditions of this RFP, including but not limited to the Contract and Specifications. The Contract shall be executed by the successful Bidder following the award of the Bid. These Bid Documents contain the applicable Contract and Specifications.

## 8.0 Bid Bond

- 8.1 A bid bond is not required by MGL c. 30B for this engagement.

## 9.0 Bid Form

- 9.1 The price on the Price Bid Form shall be written in words and figures. In the event of a discrepancy, the words shall control.
- 9.2 All Price Bids shall be compared on the basis of the Lump Sum Contract Amount on the Price Bid Form. The Bid shall be for the completed work.
- 9.3 Corporate Bids shall be executed in the corporate name by an officer with express, written authority. The corporate seal shall be affixed and attested by the corporate secretary. The corporate address and state of incorporation shall be shown below the signature. Bids by



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partnerships must be executed in the partnership name and signed by all the partners. The official address of the partnership must be shown on the Bid Form.

- 9.4 Bidders must separately acknowledge receipt of each Addenda (the numbers of which must be filled in on the Bid Forms). If no addenda are issued, the Bidder shall fill in "none".
- 9.5 The Owner reserves the right to reject any Bid if the evidence submitted or other information obtained by the Owner upon its own investigation fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Work set forth therein.
- 9.6 All Bids will remain subject to acceptance by Owner for a period of sixty (60) days (Saturdays, Sundays and legal holidays excluded) after the day of opening of Non-Price Bids.
- 10.0 Bid Bond: NOT USED Per MGL. C. 30B
- 11.0 Quantities and Price
- 11.1 The Bid Price shall take into account all the obligations imposed on the Builder by the Contract Documents.
- 11.2 All prices shall be firm.
- 12.0 Payment and Insurance
- 12.1 The Bidder shall be required to provide proof of such insurance, as required by the Owner. Such proof may include providing the Owner a copy of the Policy, if so requested. The surety shall be authorized to do business in Massachusetts. Adequate proof of insurance and payment bonds shall be required at the time of execution of the Contract.
- 13.0 Execution of the Contract
- 13.1 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Contract with all other written Contract Documents attached. Within five (5) days (Saturdays, Sundays and legal holidays excluded) after presentation thereof by Owner, Design/Builder shall sign and deliver the required number of counterparts of the Contract and attached documents to Owner with the required Bonds and insurance certificates.
- 13.2 If the Successful Bidder fails to execute a Contract in accordance with the terms of its Bid, within the above time limits, and furnish the required Bonds and insurance

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certificates, which are acceptable to Owner, Owner may consider the Bidder in default and the Bidder's Bid security shall become the property of Owner, as liquidated damages, and Owner may consider the Bid of the next lowest responsible and eligible Bidder.

- 13.3 If the Bidder is determined to be in default, Bidder's Bid security shall become the property of Owner, as liquidated damages, and Owner will consider the Bid of the next lowest responsible and eligible Bidder.
- 14.0 Notice to Proceed
- 14.1 The Owner shall issue a Notice to Proceed within thirty (30) days of the execution of the Contract by Owner. This time may be extended by mutual agreement between Owner and Design/Builder. The Notice to Proceed shall establish the date of Commencement of the Work, the date of Substantial Completion and the date of Final Completion, as they are defined in the Contract.
- 15.0 Sales and Use Tax Exemptions
- 15.1 Owner is exempt from Commonwealth of Massachusetts Sales and Use Tax on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Contract Price.
- 16.0 Laws and Regulations
- 16.1 All applicable federal and state, local laws, and applicable rules and regulations, shall apply to the Contract throughout, and they will be deemed to be included in the Contract Documents as though they were written out in full therein. The successful Bidder is solely responsible for its compliance and the full compliance of its subcontractors, and the employees and agents of either.
- 17.0 Minimum (Prevailing) Wage Rates
- 17.1 Minimum Wage rates as determined by the Commissioner of the Department of Labor and Industries under the provisions of the Commonwealth of Massachusetts General Laws, Chapter 149, Section 26 to 27D, apply to all work including, but not limited to, construction of foundations, attachment to external utilities, and installation and assembly of modular unit, including any assembly performed at any site in the commonwealth other than a place of manufacture. All applicable provisions of building codes and other laws shall apply to this Project.
- 17.2 The Minimum Wage Rates Determination shall be kept posted in a conspicuous place at the site of the Work throughout the active progress of the Work.

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## 18.0 Guarantee

18.1 The General Contractor shall warrant and guarantee to Owner that all Work shall be in accordance with the Contract Documents and shall not be defective. This guarantee shall be for a period of two (2) years from the date of Substantial Completion and shall be as further described in the Contract and Specifications.

## 19.0 Miscellaneous

19.1 The Owner reserves the right to reject any or all Bids and to determine the Bid deemed in its best interest. The Owner may waive minor informalities or allow a Bidder to correct them to the extent allowed by law.

# **WBMLP: Goodale Park EV Charging Stations**

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## **Goodale Park EV Charging Station Installation Project Narrative**

### **General Contracting Scope**

At existing Goodale Street Parking lot, corner of Crescent Street and Goodale Street in West Boylston, provide trenching, pavement removal, piers/slab/curb for installation of dual Level III **Chargepoint** EV Charger units, installation of base templates within piers/pad and installation of owner-supplied removable bollards and signage plaque. Once electrical installation work has been completed, the General Contractor shall backfill trenches over conduit and conductors, install perforated PVC drainage system with crushed stone bed to provide drainage around equipment slab. Provide new paint stripes and access striping for affected parking spaces, reinstall topsoil and re-seed affected area. WBMLP will monitor condition of trees that may have branches and root trimming; general contractor will not be responsible for tree trimming or removal.

### **Electrical Contracting Scope**

Furnish and install electrical conduit, conductors, disconnect switch, and communication cabling from existing utility pole to disconnect at base of pole (approximately 4 to 5 feet above grade) through trenches to metering pedestal and continued to two (2) EV Charger units. Electrician shall install 480V warning tape over conduit. *Electrician shall review wiring diagram (E-1) provided within the Construction Documents and install according to drawings.*

### **Owner Supplied Appliances and Fixtures:**

The owner shall provide the following:

(2) ChargePoint Express 250 EV charger units with concrete mounting template

(1) Milbank metering pedestal, with mounting template for concrete pad

Pole top transformer purchased and installed by WBMLP

(4) Removable bollards

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## REQUIRED BID FORM

### BID FOR: GENERAL CONTRACTOR SERVICES

<b>COMPANY NAME:</b>	
<b>INDIVIDUAL CONTACT NAME:</b>	
<b>TITLE:</b>	
<b>COMPANY ADDRESS:</b>	
<b>PHONE:</b>	(      )
<b>FAX/EMAIL</b>	(      )
<b>DATE:</b>	

**SIGNATURE BY INDIVIDUAL AUTHORIZED TO SUBMIT BID:**

**BY:** \_\_\_\_\_  
(print name)

**SIGNED:** \_\_\_\_\_

**PRICE BID:** \$ \_\_\_\_\_ including Addendum No. \_\_\_\_\_

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## Certificate of Non-Collusion

### *Chapter 30B, § 10*

"The undersigned certifies under penalties of perjury that this bid or Bid has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals."

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Individual or Corporate Name of Bidder

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Signature of Authorized Agent

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Printed Name of Authorized Agent

---

Date

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## Certificate of Tax Compliance

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

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Social Security or Federal I.D. Number

---

Signature: Individual or Corporate Officer

---

Date

### Please Print:

Corporate Name:

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Address:

---

P.O. Box:

---

City, State, Zip Code:

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\* Your Social Security Number or Federal Identification Number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Bidders who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed or extended. This request is made under the authority of M.G.L. Ch. 62C, § 48A.

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## CERTIFICATE OF AUTHORITY MEETING OF BOARD OF DIRECTORS

At a meeting of the Directors of the \_\_\_\_\_ duly called  
(Corporation)

and held at \_\_\_\_\_ on the \_\_\_\_\_ day of

\_\_\_\_\_, in the \_\_\_\_\_ year at which a quorum was present and acting, it was

voted, that \_\_\_\_\_ the \_\_\_\_\_ of this Corporation  
(name) (title/position)

is hereby authorized and empowered to submit a bid, make, enter into, sign, seal and deliver, on

behalf of this Corporation a Contract for \_\_\_\_\_

\_\_\_\_\_  
(brief description)

with the Town of West Boylston, and to issue any bid or payment bonds if required in connection with such Contract.

*I hereby certify that the above is a true and correct copy of the record, that said vote has not*

*been amended or repealed and is in full force and effect as of this date, and that*

\_\_\_\_\_ *is duly elected* \_\_\_\_\_ *of*

*this Corporation.*

\_\_\_\_\_  
**Clerk or Secretary of the Corporation**



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## **Labor Harmony and OSHA Training Certificate**

The undersigned certifies that:

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

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Signature: Individual or Corporate Officer

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Date



**COMMONWEALTH OF MASSACHUSETTS  
STANDARD VERTICAL CONSTRUCTION CONTRACT  
For Projects Over \$25,000 Subject to M.G.L. c30 39M**

**OWNER - CONTRACTOR AGREEMENT**

Awarding Authority: West Boylston Municipal Lighting Plant (WBMLP)

This agreement (“Contract”) is made as of the \_\_\_\_ day of \_\_\_\_\_, 2022 by and between the West Boylston Municipal Lighting Plant acting by and through the Awarding Authority identified above with a principal place of business at 4 Crescent St, West Boylston MA, and \_\_\_\_\_, with a principal place of business at \_\_\_\_\_, hereinafter called the “Contractor.”

Terms used in this Owner - Contractor Agreement which are defined in the General Conditions of the Contract shall have the meanings designated therein.

The Awarding Authority and the Contractor agree as follows:

**Article 1. Scope of Work.** The Work under this Contract is defined as all work required by the Contract Documents for the construction of WBMLPs Interior Renovation Project, WBMLP, in accordance with and as described in the Plans and Specifications dated \_\_\_\_\_.

**Article 2. Time for Completion.** The Contractor shall commence the Work under this Contract on the date specified in the written “Notice to Proceed,” and shall, within \_\_\_\_ days after such date, bring the Work to Substantial Completion and to the point at which a Certificate of Agency Use and Occupancy may be issued, and shall bring the Work to Final Acceptance within 45 days after the date specified for Substantial Completion.

**Article 3. Contract Price.** The Awarding Authority shall pay the Contractor, in current funds, for the performance of the Work, subject to additions and deductions by Approved Change Order(s), the Contract Price of \_\_\_\_\_ dollars (\$00.00). The Unit Prices, if any, approved by the Awarding Authority are those included in the Contractor’s General Bid. The following Alternates have been accepted and their costs are included in the Contract Price:

Alternate No(s): *None/NA*

**Article 4. Approved Subcontractors.** The filed Subcontractors listed in the Contractor's General Bid submitted by the Contractor have been approved for the performance of the specified portions of the Work subject to the Commonwealth's verification that they have complied with state corporation and partnership registration laws. No other filed Subcontractors and no non-filed Subcontractors shall be used for these or any other portions of the Work without the prior written approval of the Awarding Authority.

**Article 5. Certifications.** Pursuant to M.G.L. c. 62(c), s.49 (a), the individual signing this Contract on behalf of the Contractor hereby certifies, under the penalties of perjury, that to the best of his or her knowledge and belief the Contractor has complied with any and all applicable state and federal tax laws. The individual signing this Contract on behalf of the Contractor further certifies under penalties of perjury that the Contractor is not presently debarred from doing public construction work in the Commonwealth under the provisions of M.G.L. c. 29, s. 29F, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder and is not presently debarred from doing public construction work by any agency of the United States.

**Article 6. The Contract Documents:** The following documents form the Contract, are incorporated by reference herein, and are referred to as the "Contract Documents:"

- The Instructions to Bidders
- The General Bid submitted by the Contractor
- This Owner — Contractor Agreement
- Contract Documents - General Terms and Conditions
- The Plans and Specifications, including Addenda identified in Article 1 above
- All Approved Change Orders issued after execution of this Owner - Contractor Agreement

**Article 7. Minority Business Enterprise and Women Business Enterprise Participation Goals and Minority/Women Workforce Utilization Percentages:** The applicable goals, if any, for minority business enterprise and woman business enterprise participation established for this Contract are as follows: NA

MBE: 0% of the Contract Price. WBE: 0% of the Contract Price.

The applicable minority workforce utilization percentage, if any, is 0.

The applicable women workforce utilization percentage, if any, is 0.

**Article 8. Liquidated Damages.** For the purposes of Article 8 of the General Conditions of the Contract, liquidated damages for delay shall be as follows:

\$250.00 per day

**Article 9. Additional Insurance Provisions.** The insurance requirements set forth in Article XIV of the General Conditions of the Contract are supplemented by the provisions, if any, appearing in Exhibit A attached hereto and incorporated herein.

In witness whereof, the parties hereto have caused this instrument to be executed in triplicate under seal as of the date set forth above.

**CONTRACTOR:**

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

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

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

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

**AWARDING AUTHORITY:**

By executing this Agreement, the undersigned authorized signatory of the Awarding Authority, who incurs no personal liability by reason of the execution hereof or anything herein contained, hereby certifies under penalties of perjury that this Contract is executed in accordance with a prior approval of the Division of Capital Asset Management and Maintenance, and further certifies under the penalties of perjury that all the applicable provisions of M.G.L. c.149, §44J, have been complied with.

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

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

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

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

**EXHIBIT A to the Owner-Contractor Agreement**

**Additional Insurance Provisions**

*(Insert any additions or modifications to the Insurance Requirements contained in Article XIV of the General Conditions of the Contract here or indicate “None.”)*

*None*

## **EXHIBIT B to the Owner-Contractor Agreement**

### **Forms Used During Contract Award and Execution**

Invitation to Bid Advertisement notice  
Legal Notice Bid WBMLP EV Charging Stations  
Prevailing Wage Schedule  
Contract Documents – General Terms and Conditions  
Supplemental Terms and Conditions  
Specifications for General Contracting

#### **General Specifications**

004373 - PROPOSED SCHEDULE OF VALUES FORM.pdf  
012500 - SUBSTITUTION PROCEDURES.pdf  
013300 - SUBMITTAL PROCEDURES.pdf  
015000 - TEMPORARY FACILITIES AND CONTROLS\_SP.pdf  
017000 - EXECUTION AND CLOSEOUT REQUIREMENTS\_SP.pdf  
PREVAILING WAGE RATES EV CHARGING STATIONS.pdf (MA Prevailing Wage Schedule)

#### **Technical Specifications**

024119 - SELECTIVE DEMOLITION.pdf  
031000 - CONCRETE FORMING AND ACCESSORIES.pdf  
032000 - CONCRETE REINFORCING.pdf  
033000 - CAST-IN-PLACE CONCRETE.pdf

#### **Reference Specifications**

Charge Point Electrical Vehicle (EV) Charging Station CPE250 Data sheet.pdf  
Charge Point Express 250 Site Design Dual Installation.pdf  
Milbank Enclosed Control Panel

## **List of Drawings**

WBMLP EV Charging Station Existing Site Plan L,1.pdf

WBMLP EV Charging Station Proposed Site Plan L.2.pdf

WBMLP EV Charging Station Enlarged Plan Sections Details A.301

WBMLP EV One-Line Oct 9th 2022\_E-1.pdf

# WEST BOYLSTON MUNICIPAL LIGHTING PLANT

4 Crescent Street, West Boylston, Massachusetts 01583  
Telephone (508) 835-3681 Fax (508) 835-2952

## Goodale Park EV Charging Stations

### CONTRACT DOCUMENTS

#### ARTICLE 1

##### 1.1 DEFINITIONS

##### 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Owner-Contractor Agreement, these General Terms and Conditions, Supplemental Terms and Conditions, the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of the Contract, and all applicable laws, ordinances and regulations. A Modification is (1) a written amendment to the contract signed by both parties, (2) a Change Order, (3) a written interpretation issued by the Owner or (4) a written order for a minor change in the Work issued by the Owner pursuant to Paragraph 12.3. The Contract Documents include Bidding Documents such as the Advertisement or Invitation to Bid, the Instructions to Bidders, sample forms, the Contractor's Bid or portions of Addenda relating to any of these, or any other documents, specifically enumerated in the Owner-Contractor Agreement.

##### 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. This Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification as defined in Subparagraph 1.1.1.

##### 1.1.3 THE WORK

The Work comprises the completed construction required by the Contract Documents and includes all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

##### 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.

##### 1.1.5 "OR EQUAL"



The use of the words "Or Equal" following the name of any manufacturer, vendor or proprietary product shall be understood to mean that articles or materials may be substituted which, in the opinion of the Owner, are equal in quality, durability, appearance, strength, design and performance to the articles or materials named or described and will perform adequately in providing a first-class facility.

When submitting shop drawing information on articles or materials which are being proposed as substitutes for specified items, the Contractor shall clearly identify them as such. If the articles or materials are accepted as equal to those on which dimensions on the drawings are based, any dimensional variance from those shown and/or specified shall be shown on the shop drawings prepared by the Contractor, illustrating the manner in which conformity to dimensions and design is to be obtained. All such drawings shall be subject to the approval of the Owner and the installation of the article shall not proceed without first obtaining said approval.

## 1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.

1.2.2 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.3 The organization of the Specifications into divisions, sections and articles, and the 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.

## 1.3 OWNERSHIP AND USE OF DOCUMENTS

1.3.1 All Drawings, Specifications and copies thereof furnished by the Owner are and shall remain the Owner's property. They are to be used only with respect to this Project and are not to be used on any other project without the prior written consent of the Owner. With the exception of one contract set for each party to the Contract, such documents are to be returned or suitably accounted for to the Owner at the completion of the Work. Submission or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of any reserved rights.

## ARTICLE 2

### 2.1 ADMINISTRATION OF THE CONTRACT

2.1.1 The Owner will visit the site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. However, the Owner will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work.

2.1.2 The Owner shall at all times have access to the Work wherever it is in preparation and progress. The Contractor shall provide facilities for such access so the Owner may perform its functions under the Contract Documents.

2.1.3 Based on the Owner's observations and an evaluation of the Contractor's Applications for Payment, the Owner will determine the amounts owing to the Contractor and will approve invoices and/or issue Certificates for Payment in such amounts, as provided in Paragraph 9.4.

2.1.4 The Owner will render information necessary for the proper execution or progress of the Work within twenty (20) days of any request by the contractor or in accordance with any time limit agreed upon.

2.1.5 The Owner will have authority to reject Work which does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the Work in accordance with Subparagraph 7.7.2 whether or not such Work be then fabricated, installed or completed. Any such rejection of work shall not relieve the Contractor of the responsibility for maintaining protection of the Work and the Owner's property.

2.1.6 The Owner will review and approve or take other appropriate action upon Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Owner's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

2.1.7 The Owner will prepare Change Orders in accordance with Article 12, and will have authority to order minor changes in the Work as provided in Subparagraph 12.4.1.

2.1.8 The Owner will conduct inspections to determine the date of Substantial Completion and Final Completion, will review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of Paragraph 9.8.

### ARTICLE 3

#### OWNER

##### 3.1 DEFINITION

3.1.1 The Owner is the person or entity identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Owner means the Owner or his authorized representative, which for this Project shall be the West Boylston Municipal Lighting Plant.

### 3.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

3.2.1 The Owner shall furnish all surveys describing the physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site.

3.2.3 The Owner shall furnish all instructions directly to the Contractor.

### 3.3 OWNER'S RIGHT TO STOP THE WORK

3.3.1 If the Contractor fails to correct defective Work as required by Paragraph 13.2 or fails to carry out the Work in accordance with the Contract Documents or if the Owner shall for any other reason so require, the Owner, by a written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated or until further written notice from the Owner; however, this right of the Owner to stop the Work shall not give rise to any 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 Subparagraph 6.1.3. The Contractor shall resume the Work after such stoppage promptly upon written notice to do so from the Owner. If such stoppage is required through no fault of the Contractor, the Contract Time (and the dates for achieving Substantial Completion and Final Completion) shall be extended by a period equal to the period of the stoppage, and the Contractor shall be compensated for its reasonable and justifiable costs incurred as a result of such stoppage.

### 3.4 OWNER'S RIGHT TO CARRY OUT THE WORK

3.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seven days 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 any other remedy he may have, perform such work or cause such work to be performed and/or make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for additional services made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover the amount, the Contractor shall pay the difference to the Owner.

## ARTICLE 4

### CONTRACTOR

#### 4.1 DEFINITION

4.1.1 The Contractor is the person or entity identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

#### 4.2 REVIEW OF CONTRACT DOCUMENTS

4.2.1 The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Owner any error, inconsistency or omission he may discover. The Contractor shall not be liable to the Owner for any damage resulting from errors, inconsistencies or omissions in the Contract Documents which he discovers but shall be liable for damage to the extent he reasonably should have but failed to discover such errors, inconsistencies or omissions. The Contractor shall perform no portion of the Work at any time without Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

#### 4.3 SUPERVISION PROCEDURES

4.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty and location. The Contractor shall maintain adequate supervisory personnel at the Premises during the performance of the Work. He shall be solely responsible for all Work means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

4.3.2 The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor. This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the work.

4.3.3 The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner in its administration of the Contract, or by inspection, tests or approvals required or performed under Paragraph 7.7 by persons other than the Contractor.

#### 4.4 LABOR AND MATERIALS

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

4.4.2 The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him including all persons on the Site controlled directly or indirectly by the Contractor.

#### 4.6 TAXES

4.6.1 The Contractor shall pay all applicable sales, consumer, use and other similar taxes for the Work or portion thereof provided by the Contractor which are legally enacted at the time bids are received, whether or not yet effective.

4.6.2 Owner is exempt from payment of Massachusetts state and local taxes on tangible property and services and will not reimburse Contractor for such taxes incurred by Contractor, except as otherwise specifically provided for in these Contract Documents. Contractor shall be liable for and shall pay any sales, use, excise or other tax which may be imposed upon any of the goods or their sale, use or delivery.

#### 4.7 PERMITS, FEES AND NOTICES

4.7.1 Unless otherwise expressly provided in the Contract Documents, the Contractor shall secure and pay for all permits and fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required at the time the bids are received, and the same shall at all times be the property of the Owner and shall be delivered to the Owner upon completion of the Project.

4.7.2 The Contractor shall give all notices and comply with all Laws bearing on the performance of the Work. The Contractor shall provide the Owner with reproductions of all permits, licenses and receipts for any fees paid.

4.7.3 If the Contractor observes that any of the Contract Documents are at variance with applicable laws, statutes, codes and regulations in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be accomplished by appropriate Modification.

4.7.4 If the Contractor performs any Work which he knows or should know is contrary to such Laws, he shall assume full responsibility therefor and shall bear all costs attributable thereto.

#### 4.8 SUPERINTENDENT

4.8.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during the progress of the Work. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be so confirmed on written request in each case.

#### 4.9 SCHEDULE

4.9.1 The Contractor, immediately after being awarded the Contract, shall prepare and submit for the Owner's information a detailed progress schedule for the Work. The schedule 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.

#### 4.10 DOCUMENTS AND SAMPLES AT THE SITE

4.10.1 The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, and "As-Built" Drawings and Specifications in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be available to the Owner upon completion of the Work in the number and forms set forth in Section D, SPECIFICATIONS.

#### 4.11 [Intentionally Left Blank]

#### 4.12 USE OF SITE

4.12.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with any materials or equipment.

4.12.2 The Contractor shall have access to the Site necessary to perform the Work, including ingress and egress.

#### 4.13 CUTTING AND PATCHING OF WORK

4.13.1 The Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work or to make its several parts fit together properly.

4.13.2 The Contractor shall not damage or endanger any portion of the Work or the work of the Owner or any separate contractors by cutting, patching or otherwise altering any work, or by excavation. The Contractor shall not cut or otherwise alter the work of the Owner or any separate contractor except with the written consent of the Owner and of such separate contractor. The Contractor shall not unreasonably withhold from the Owner or any separate contractor his consent to cutting or otherwise altering the Work.

#### 4.14 CLEANING UP/HAZARDOUS MATERIALS

4.14.1 The Contractor at all times shall keep the premises free from accumulation of debris or rubbish caused by his operations. At the completion of the Work he shall remove all his debris and rubbish from and about the Project in full compliance with all applicable laws and regulations as well as all his tools, construction equipment, machinery and surplus materials and the Project shall be thoroughly cleaned and ready for immediate occupancy by the Owner. All

non-hazardous debris, metal, etc. will be collected in a dumpster provided by and removed by the Contractor. The Contractor shall identify and coordinate the collection of potential hazardous waste with the Owner. The Owner will manage the collection and dispose of hazardous waste.

4.14.2 If the Contractor fails to clean up at the completion of the Work, the Owner may do so as provided in Paragraph 3.4 and the cost thereof shall be charged to the Contractor.

4.14.3 Under no circumstances shall the Contractor provide materials or components, which contain PCBs or asbestos. This prohibition includes items such as, but not limited to, packings, seals, gaskets, or insulation, regardless whether the item is encapsulated or asbestos fibers are impregnated with a binder material. The restriction shall apply to all materials and/or chemicals which contain lead, chromium, mercury, selenium, barium, cadmium, silver or their respective compounds; benzene; Chlorofluorocarbons, such as Freon; and chlorinated hydrocarbons such as but not limited to 1,1,1-Trichloroethane, Perchloroethylene, Carbon Tetrachloride, or Methylene Chlorite, etc. In the instance or application where no other material is an acceptable or feasible substitute for any of the above referenced items, the Contractor shall, in writing inform the Owner of the pertinent facts regarding the application. The Owner will respond, in writing, with the disposition of the material or chemical component. No verbal requests and dispositions shall be contractually binding unless accompanied by an MSDS Form and such requests and dispositions are confirmed in writing and accepted by the Owner.

#### 4.15 ROYALTIES AND PATENTS

4.15.1 The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified, but if the Contractor believes or has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner, and thereafter the Owner insists on the use of the design, process or products specified.

#### 4.16 INDEMNIFICATION

4.16.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, its commissioners, managers, engineers, consultants, agents and employees from and against any and all claims, demands, suits, liabilities, causes of action, fines, penalties, court costs, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from, occasioned by or in connection with the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom, caused in whole or in part by any negligent, grossly negligent, or intentional act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder; or (2) arises from taxes for which Contractor or Subcontractor is liable under this Contract; or (3) is attributable to the release or disposal of or

exposure to persons to the Contractor's Hazardous Materials as defined herein; or (4) results from violations of applicable laws, regulations, ordinances or rulings; or (5) arising from any material misrepresentation of the Contractor under this Contract; provided however, that this obligation shall not apply to any claims to the extent arising from the gross negligence or intentionally wrongful acts or omissions of the Owner. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph 4.16. For the purposes of this Contract, "Contractor Hazardous Materials" means any hazardous, toxic or polluting substance, material, chemical, waste or contaminant, or residues thereof, as defined or regulated pursuant to all applicable laws and regulations as may be amended from time to time ("Hazardous Materials"), and that are brought on to the Site, furnished, applied, used, stored or released or otherwise introduced into or on to the Site by the Contractor or any Subcontractor or any person for whom Contractor is legally responsible.

4.16.2 In any and all claims against the Owner or any of its agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 4.16 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

#### 4.17 LIENS

4.17.1 Contractor shall keep the Work, the Site, the equipment and the materials free from and indemnify, defend and hold Owner harmless from the existence of all liens, charges, claims and judgments, security interests, and encumbrances ("Liens") arising out of the performance of the Work under this Contract. If Owner seeks indemnification by Contractor for any Lien, Owner shall (a) give Contractor prompt notice of any Lien of which it has knowledge; (b) cooperate in the defense of the Lien at Contractor's expense and (c) give Contractor control of the defense and settlement, to the extent of Contractor's liability, of the Lien at Contractor's expense; *provided* that Contractor shall promptly confirm in writing its obligation to indemnify Owner with respect to all costs and expenses with respect to the Lien. Contractor shall take prompt steps to discharge any Lien field against the Work, the Site, any equipment, any material and any structures comprising Owner's facilities or located on the Site by any Subcontractor based on a claim for payment in connection with the Work. If Contractor fails to discharge any Lien within ten (10) days after written notice from Owner of such Lien, Owner shall have the right, upon notifying Contractor in writing, to take any reasonable action to satisfy, defend, settle, or otherwise remove the Lien at Contractor's expense, including reasonable attorney's fees, costs, and expenses. Owner shall have the right to deduct and offset any expenses so incurred from any payment due, or which may become due, to Contractor under this Contract and to recover those expenses from Contractor. Contractor shall have the right to contest any Lien; *provided* that it first must provide to the lien holder, a court or other appropriate third person as applicable, a bond or other assurances of payment necessary to remove the Lien and all other encumbrances related to the Work from the Site in accordance with all applicable laws. Contractor's indemnity obligations set forth in this Section 4.17 shall survive the termination of



this Agreement. The Parties further agree that the waiver of Liens herein shall operate as an independent covenant in favor of Owner and its successors and assigns and shall operate and be effective with respect to work done and materials and services furnished under any supplemental contract for extra work in connection with the effort for the Project as well as to any work and labor done and materials furnished under this Contract.

## ARTICLE 5

### SUBCONTRACTORS

#### 5.1 DEFINITION

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

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

#### 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 Unless otherwise required by the Contract Documents, the Contractor, as soon as practicable after the award of the Contract, shall furnish to the Owner in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. The Owner will reply to the Contractor in writing within twenty (20) days stating whether or not the Owner, after due investigation, has reasonable objection to any such proposed person or entity.

5.2.2 The Contractor shall not contract with any such proposed person or entity to whom the Owner has made reasonable objection under the provisions of Subparagraph 5.2.1. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection.

5.2.3 If the Owner has reasonable objection to any such proposed person or entity, the Contractor shall submit a substitute to whom the Owner has no reasonable objection.

5.2.4 The Contractor shall make no substitution for any Subcontractor, person or entity previously selected if the Owner makes reasonable objection to such substitution.

#### 5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By an 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 the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Documents, assumes toward the Owner. Said agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Paragraph 5.3, and identify to the Subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Documents available to his Sub-subcontractors. The Contractor shall be fully responsible to the Owner for the acts and omissions of all Subcontractors and other entities or persons directly or indirectly employed by him to perform the Work. If requested by the Owner, the form and substance of any Subcontract with the Contractor shall be subject to the prior written consent of the Owner, which consent shall not be unreasonably withheld or delayed.

## ARTICLE 6

### WORK BY OWNER OR BY SEPARATE CONTRACTORS

#### 6.1 OWNER'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner reserves the right to award separate contracts in connection with other portions of the project or other work on the site under these or similar Conditions of the Contract.

6.1.2 When separate contracts are awarded for different portions of the project or other work 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 will provide for the coordination of the work of his own forces and of each separate contractor with the Work of the Contractor, who shall cooperate therewith as provided in Paragraph 6.2.

#### 6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall connect and coordinate his Work with theirs as required by the Contract Documents.

6.2.2 If any part of the Contractor's Work depends for proper execution or results upon the work of the Owner or any separate contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the Owner any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acceptance of the Owner's or separate contractors' work as fit and proper to receive his Work, except as to defects which may subsequently become apparent in such work by others.

6.2.3 Any costs caused by defective or ill-timed work shall be borne by the party responsible therefor.

6.2.4 Should the Contractor cause damage to the work or property of the Owner, or to other work on the site, the Contractor shall promptly remedy such damage as provided in Subparagraph 10.2.5.

6.2.5 Should the Contractor wrongfully cause damage to the work or property of any separate contractor, the Contractor shall upon due notice promptly attempt to settle with such other contractor by agreement, or otherwise to resolve the dispute. If such separate contractor sues or initiates an arbitration proceeding against the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor who shall defend such proceedings at the Contractor's expense, and if any judgment or award against the Owner arises therefrom the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court or arbitrations costs which the Owner has incurred.

### 6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises between the Contractor and separate contractors as to their responsibility for cleaning up as required by Paragraph 4.14, the Owner may clean up and charge the cost thereof to the contractors responsible therefor.

## ARTICLE 7

### MISCELLANEOUS PROVISIONS

#### 7.1 GOVERNING LAW

7.1.1 The Contract shall be governed by the law of the Commonwealth of Massachusetts. All applicable provisions of Federal, state, or local laws, by-laws, rules, or regulations are incorporated into the Contract as if fully set forth herein, and shall prevail over any conflicting provisions of the General Conditions.

#### 7.2 SUCCESSORS AND ASSIGNS

7.2.1 The Owner and the Contractor each bind himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations

contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner.

### 7.3 WRITTEN NOTICE

7.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to him who gives the notice. Written Notice to the Owner shall be delivered to: General Manager, West Boylston Municipal Lighting Plant, 4 Crescent Street, West Boylston, MA 01583. In the case of the Contractor, written Notice shall be delivered to:

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### 7.4 CLAIMS FOR DAMAGES

7.4.1 Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the other party or of any of his employees, agents or others for whose acts he is legally liable, claim shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage. The reasonable time shall not exceed fourteen days.

### 7.5 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

7.5.1 The Contractor shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a Payment Bond in an amount equal to one hundred percent (100%) of the Contract price as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. The **PERFORMANCE BOND** and the **PAYMENT BOND** shall be in separate instruments and in substantially the same form appearing in **Section F** and **Section G** of the Contract Documents as acceptable to the Owner and shall remain in effect through the one-year warranty period.

### 7.6 RIGHTS AND REMEDIES

7.6.1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law, except as otherwise set forth therein.

7.6.2 No action or failure to act by the Owner or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

7.7.1 Contractor represents and warrants that through the end of the Warranty Period, the equipment and materials and the Work will: (i) be free from errors, defects and damage in material and workmanship; (ii) be new and of recent manufacture when installed unless the Parties agree otherwise in advance and in writing; (iii) be of good quality and good condition; (iv) be delivered, handled, stored (whether onsite or offsite) and installed in accordance with all manufacturer's instructions and in a manner that does not void or impair manufacturer warranties; and (v) conform to the requirements of the Contract Documents, including the Specifications, as of the Final Completion Date. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. Further, the Contractor represents and warrants that through the end of the Warranty Period, the Work will be designed and installed in accordance with the Contract Documents and shall be designed and installed to permit the Project to operate in accordance with the Specifications. The Contractor shall, at his sole expense, repair, modify, correct or replace defective materials, equipment and workmanship ("Defects") and shall provide labor and materials, and shall cover all costs of transportation, reassembly, removal and replacement of such Defects within the Warranty Period, immediately upon notice from the Owner, and in prompt fashion, and shall demonstrate to the satisfaction of the Owner that the Defects have been properly corrected. With respect to any such corrected work, the Warranty Period shall be extended for the two – (2) year period after the correction of any Defect, not to exceed three (3) years after the Final Completion Date ("Extended Warranty Period"). Contractor shall use its commercially reasonable efforts to remedy any failure or breach of Warranty so as to minimize revenue loss to Owner and to avoid disruption of Owner's operations at the Site. If Contractor fails to initiate and diligently take steps to pursue corrective action within five (5) days after Contractor receives Owner's notice and to pursue that corrective action continuously thereafter, Owner may undertake or arrange corrective action at Contractor's expense. The correction of a Defect by Owner pursuant to this Section 7.7.1, shall not limit or void Contractor's warranty; provided that the correction of the Defect by Owner is in accordance with Contractor's reasonable recommendations or, in the absence of those recommendations, prudent industry practices.

7.7.2 In addition to these warranty requirements, the Contractor shall provide written equipment and material warranties offered in the Contractor's published data, without exclusion or limitation, in the Owner's name. At the end of the Warranty Period, the Contractor shall transfer any manufacturer's equipment and material warranties still in force to the Owner. For the purposes of this Contract, the Warranty Period shall be two (2) years from the Final Completion Date.

7.7.3 In addition to Contractor's warranties and subject to Section 7.7.4 below, Contractor shall use its best efforts to obtain written warranties and guarantees for the benefit of Contractor and Owner from equipment, suppliers, vendors and Subcontractors in relation to their respective portions of the Work which warrant against defects and deficiencies in each Subcontractor's work during the Warranty Period. Contractor shall promptly provide to Owner copies of all Subcontractor warranties and guarantees that Contractor obtains. Those warranties and guarantees shall provide that they survive Owner and Contractor verifications, inspections and approvals and shall be assignable to Owner. On or after the final term of the applicable

Warranty Period or Extended Warranty Period, at the request of Owner, Contractor shall assign to Owner any Subcontractor warranty that has not otherwise expired.

7.7.4 Contractor shall have primary liability to Owner with respect to the warranties in this Article 7, whether or not any Defect or other matter is also covered by a warranty of a Subcontractor or other third party, and Owner shall pursue only Contractor for any required corrective action. In addition, such warranties shall not be restricted in any manner by any warranty of a Subcontractor or other third party, and the refusal of a Subcontractor or other third party to provide or honor a warranty or to correct defective, deficient or non-conforming Work or equipment or materials shall not excuse Contractor from its liability on such warranties to Owner.

7.7.5 Contractor represents and warrants that it shall provide to Owner, as to all portions of the Work and the Facility for which Owner has paid (excluding any amounts withheld or offset by Owner against any payment sought by Contractor), good, exclusive and marketable title free and clear of all encumbrances, liens, security interests and other defects in title. In the event of any non-conformity with or breach of this warranty, Contractor, at its own expense, shall promptly, upon receipt of statutory notice of a lien, pay or discharge, or post a bond against, any such lien or encumbrance. All warranty obligations shall survive termination of the Contract.

## ARTICLE 8

### TIME

#### 8.1 DEFINITIONS

8.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Substantial and Final Completion of the Work as defined in Subparagraph 8.1.3, including authorized adjustments thereto. Time is of the essence with regard to completion of the Work required by the Contract.

8.1.2 The date of commencement of the Work is the date established in a notice to proceed. If there is no notice to proceed (“Notice to Proceed”), it shall be the date of the Owner-Contractor Agreement or such other date as may be established therein.

8.1.3 The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Owner when the Work is substantially complete, in accordance with the Contract Documents, other than only custom punch list items. The Final Completion Date is the date on which all Work and punchlist items, as defined in paragraph 9.7.1, are completed and the Owner approves the final Invoice in accordance with Paragraph 9.8.1 hereof.

8.1.4 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically designated.

#### 8.2 PROGRESS AND COMPLETION

8.2.1 All time limits stated in the Contract Documents are of the essence of the Contract.

8.2.2 The Contractor shall begin the Work on the date of commencement as defined in Subparagraph 8.1.2. He shall carry the Work forward expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time, and Final Completion thereafter in accordance with the provisions of the Contract Documents.

### 8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner or by any employee of the Owner, or by any separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably anticipated, unavoidable casualties, or any causes beyond the Contractor's or its Subcontractor's control, or by delay authorized by the Owner, then, provided such delay in no way results from the act or neglect of the Contractor or any of its Subcontractors, the Contract Time shall be extended by Change Order for such reasonable time as the Owner may determine.

8.3.2 Any claim for extension of time shall be made in writing to the Owner not more than three (3) days after the commencement of the delay; otherwise it shall be waived. In the case of a continuing delay only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the Work.

8.3.3 Interpretations shall be furnished in accordance with the provisions of G.L. c. 30, § 39P, as set forth in **Section J, SUPPLEMENTARY GENERAL CONDITIONS**, or as soon as practicable.

### 8.4 LIQUIDATED DAMAGES

8.4.1 If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contract shall be in default after the time stipulated in the Contract for completing the work.

8.4.2 The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

8.4.3 It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications wherein as definite and certain length of times if 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 time limit fixed by such extension shall be of the essence of this contract.

8.4.4 Provided, that the contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; Provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

1. to any preference, priority or allocation order duly issued by the Government;
2. to unforeseeable cause beyond the control and without the fault of negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and
3. to any delays of subcontractors or suppliers occasioned by any of the causes specified in subsection (1.) and (2.) of this article:

8.4.5 Provided, further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

## ARTICLE 9

### PAYMENTS AND COMPLETION

#### 9.1 CONTRACT SUM

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

#### 9.2 INVOICES

9.2.1 The Contractor shall submit invoices to the Owner for the Work, supported by such data substantiating the Contractor's right to payment as provided elsewhere in the Contract Documents in accordance with the milestone schedule mutually agreed by Contractor and Owner prior to commencement of the Work.

9.2.2 Payments will be made in accordance with the milestone schedule mutually agreed by the Contractor and Owner and attached to the Agreement.



9.2.3 The title and right of possession of equipment and parts repaired or modified hereunder shall remain with the Owner. Title to equipment and parts supplied hereunder shall pass to Owner upon delivery to the FOB point of destination, which shall be Owner's Facility. The Contractor warrants that title to all Work covered by an invoice will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first. To the extent Owner shall have made payments owed by it under the Contract Documents, such equipment and parts shall be free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article 9 as "liens."

### 9.3 APPROVAL OF INVOICES

9.3.1 The Owner will, within ten days after the receipt of the Contractor's invoice, approve payment of an invoice for such amount as the Owner determines is properly due under such invoice, or notify the Contractor in writing his reasons for withholding a payment as provided in Subparagraph 9.5.1.

9.3.2 The approval of the invoice will constitute a representation by the Owner, based on its observations at the site as provided in Paragraph 2.1 and the data submitted in support of the invoice, that the Work has progressed to the point indicated; that, to the best of his knowledge, information and belief, the quality of Work is in accordance with the Contract Documents (subject to an evaluation of the Work for conformance with the Contract Document upon completion, to the results of any subsequent tests required by or performed under the Contract Documents correctable prior to completion, and to any specific qualifications stated in his approval); and that the Contractor is entitled to payment in the amount approved. However, by approving an invoice, the Owner shall not thereby be deemed to represent that he has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work or that he has reviewed the construction means, methods, techniques, sequences or procedures, or that he has made any examination to ascertain how or for what purpose the Contractor has used the moneys previously paid on account of the Contract Sum.

### 9.4 PROGRESS PAYMENTS

9.4.1 After the Owner has approved an invoice, the Owner shall pay such invoice within thirty (30) days after Contractor's delivery thereof to Owner. The Owner shall withhold ten percent (10%) of the total Contract price ("Retainage") which Retainage shall be released to the Contractor upon Final Completion of the Work.

9.4.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which said Subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such Subcontractor's Work. The Contractor shall, by an appropriate agreement with each Subcontractor, require each Subcontractor to make payments to his Sub-subcontractors in similar manner.

9.4.3 The Owner may, on request and at his discretion, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor and the action taken thereon by the Owner on account of Work done by such Subcontractor.

9.4.4 The Owner shall not have any obligation to pay or to see to the payment of any moneys to any Subcontractor except as may otherwise be required by law.

9.4.5 No approval of an invoice or progress payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work not in accordance with the Contract Documents.

## 9.5 PAYMENTS WITHHELD

9.5.1 The Owner shall decline to approve payment and withhold its approval in whole or in part, to the extent necessary reasonably to protect itself. If the Owner is unable to approve payment of an invoice, he will notify the Contractor as provided in Subparagraph 9.3.1. If the Contractor and the Owner cannot agree on a revised amount, the Owner will approve payment for the amount for which it determines is properly due. The Owner may also decline to approve payment or, because of subsequently discovered evidence or subsequent observations, as may be necessary in its opinion to protect itself from loss because of:

1. defective work not remedied,
2. failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment,
3. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum,
4. damage to the Owner or another Contractor,
5. reasonable evidence that the Work will not be completed within the Contract Time, or
6. material failure to carry out the Work in accordance with the Contract Documents.

9.5.2 When the above grounds in Subparagraph 9.5.1 are removed, payment shall be made for amounts withheld because of them.

## 9.6 SUBSTANTIAL COMPLETION

9.6.1 When the Contractor considers that the Work, or a designated portion thereof which is acceptable to the Owner, is substantially complete as defined in Subparagraph 8.1.3, the Contractor shall prepare for submission to the Owner a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Owner on the basis of an inspection determines that the Work or designated portion thereof is substantially complete, he will then prepare for a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for

security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. 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 shall be submitted to the Owner and the Contractor for their written acceptance of the responsibility assigned to them in such Certificate.

9.6.2 Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and Certification by the Owner, the Owner shall make payment, for such Work or portion thereof, as provided in the Contract Documents.

## 9.7 FINAL COMPLETION AND FINAL PAYMENT

9.7.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final invoice, the Owner will promptly make such inspection and, when it finds the Work acceptable under the Contract Documents and the Contract fully performed, it will promptly approve payment of the final invoice stating that to the best of its knowledge, information and belief, and on the basis of its observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due to the Contractor is due and payable.

9.7.2 Neither the final payment nor the Retainage shall become due until the Contractor submits to the Owner (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible, have been fully paid or otherwise satisfied, (2) consent of surety, if any, to final payment and (3), if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as the written document described in Paragraph 13.2.2, receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner. If any Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify him against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

9.8.3 If, after Substantial Completion of the Work, final completion thereof is delayed for more than ninety (90) days through no fault of the Contractor or by the issuance of Change Orders affecting final completion, the Owner shall, upon application by the Contractor, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted, provided that the remaining balance for Work not fully completed or corrected shall not be less than the Retainage as stipulated herein, and as bonds will have been furnished as provided in Paragraph 7.5, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Owner prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.8.4 The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:

1. unsettled liens,
2. faulty or defective Work appearing after Substantial Completion,
3. failure of the Work to comply with the requirements of the Contract Documents, or
4. terms of any special warranties required by the Contract Documents.
5. obligations under the Performance and Payment Bonds.

9.8.5 The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled prior to the time of the final invoice.

## ARTICLE 10

### PROTECTION OF PERSONS AND PROPERTY

#### 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

#### 10.2 SAFETY OF PERSONS AND PROPERTY

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

1. all employees on the Work and all other persons who may be affected thereby;
2. all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors or Sub-subcontractors; and
3. other property at the site or adjacent thereto, including 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 give all notices and comply with all applicable laws, ordinances, rules, regulations and orders of any public authority bearing on the 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 progress of the Work, all 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 utilities.

10.2.4 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy all damage or loss to any property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the Contractor is responsible under Clauses 10.2.1.2 and 10.2.1.3., except damage or loss solely attributable to the acts or omissions of the Owner, or anyone directly or indirectly employed by the Owner, or by anyone for whose acts the Owner may be liable, and not attributable to the acts or omissions of the Owner, or anyone directly or indirectly employed by Owner, or by anyone for whose acts it may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to his obligation under Paragraph 4.17.

10.2.6 The Contractor shall designate a responsible member of his 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.

10.2.7 The Contractor shall not load or permit any part of the Work to be loaded so as to endanger its safety.

### 10.3 EMERGENCIES

10.3.1 In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in Article 12 for Changes in the Work.

## ARTICLE 11

### INSURANCE

#### 11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor will furnish and maintain insurance with the coverages and limits set forth in **Section I, INSURANCE** at its own expense, without limiting its indemnity under this Agreement and provide evidence of the coverage on certificates issued by Contractor's insurance broker as required in **Section I, INSURANCE**, on behalf of the carriers qualified to do business in the Commonwealth of Massachusetts having a Best rating of A- and a financial classification of IX or better. The insurance shall be effective as of the date of the Notice to Proceed. Deductible amounts shall be the responsibility of the Contractor. Such coverage shall include the following:

1. Include Owner and its commissioners, agents, and employees as additional insureds for the activities and operations under this Contract;

2. Severability-of-Interest or Cross-Liability Paragraph;
3. A copy of the additional insured endorsement listing Owner as an additional insured under the insurance policy.

11.2 The insurance required by Subparagraph 11.1. shall be written for not less than any limits of liability specified in the Contract Documents, or required by law, whichever is greater.

11.3 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. See **Section I, INSURANCE**. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled until at least thirty days prior written notice has been given to the Owner. Certificates of renewal shall be delivered to the Owner at least fifteen (15) days prior to the expiration date of any insurance policy. The Contractor shall not commence the Work until all insurance required hereunder shall have been obtained and approved by the Owner, and the Contractor shall not permit any Subcontractor or Sub-subcontractor to commence work until all insurance required of them shall have been similarly obtained and approved. Coverage shall remain effective for a period of two (2) years after termination of the Owner-Contractor Agreement for any reason.

## ARTICLE 12

### CHANGES IN THE WORK

#### 12.1 CHANGE ORDER

12.1.1 A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order.

12.1.2 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents.

12.1.3 The cost or credit to the Owner resulting from a change in the Work shall be determined in one or more of the following ways:

1. by mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
2. by unit prices stated in the Contract Documents or subsequently agreed upon;
3. by cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

4. by the method provided in Subparagraph 12.1.4.

12.1.4 If none of the methods set forth in Clauses 12.1.3.1, 12.1.3.2 or 12.1.3.3 is agreed upon, the Contractor, provided he receives a written order signed by the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Owner on the basis of the reasonable expenditures and savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clauses 12.1.3.3 and 12.1.3.4 above, the Contractor shall keep and present an itemized accounting together with appropriate supporting data for inclusion in a Change Order. Unless otherwise provided in the Contract Documents, cost shall be limited to the following: actual cost of materials, not including sales tax and cost of delivery; wages at rates set forth in the Contract Documents; rental value of equipment and machinery; and the additional costs of supervision and field office personnel directly attributable to the change. Pending final determination of cost to the Owner, payments on account shall be made on the Owner's Certificate for Payment. The amount of credit to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in the Contract Sum will be the amount of the actual net cost. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.

12.1.5 Unit prices are stated in the Bid Form and the Contract shall include all costs of the Contractor to the Owner as listed in Paragraph 12.1.4. No additional charges shall be allowed for these items under any circumstances.

## 12.2 CONCEALED CONDITIONS

12.2.1 Should concealed conditions encountered in the performance of the Work below the surface of the ground or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the Contract Documents, or should unknown physical conditions below the surface of the ground or should concealed or unknown conditions in an existing structure of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in his Contract, be encountered, the Contract Sum shall be equitably adjusted by Change Order upon claim by either party made within twenty days after the first observance of the conditions.

## 12.3 CLAIMS FOR ADDITIONAL COST

12.3.1 If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Owner written notice thereof within twenty days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property in which case the Contractor shall proceed in accordance with Paragraph 10.3. No such claim shall be valid unless so made. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

12.3.2 If the Contractor claims that additional cost is involved because of, but not limited to, (1) any written interpretation by the Owner or Engineer, (2) any order by the Owner to stop the Work pursuant to Paragraph 3.3 where the Contractor was not at fault, (3) any written order for a minor change in the Work issued pursuant to Paragraph 12.4, or (4) failure of payment by the Owner pursuant to Paragraph 9.7, the Contractor shall make such claim as provided in Subparagraph 12.3.1.

#### 12.4 MINOR CHANGES IN THE WORK

12.4.1 The Owner and Engineer will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be affected by written order, and shall be binding on the Owner, Engineer and the Contractor. The Contractor shall carry out such written orders promptly.

### ARTICLE 13

#### UNCOVERING AND CORRECTION OF WORK

##### 13.1 UNCOVERING OF WORK

13.1.1 If any portion of the work should be covered contrary to the request of the Owner or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Owner, be uncovered for his observation and shall be replaced at the Contractor's expense.

13.1.2 If any other portion of the Work has been covered which the Owner has not specifically requested to observe prior to being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it be found that this condition was caused by the Owner or a separate contractor as provided in Article 6, in which event the Owner shall be responsible for the payment of such costs.

##### 13.2 CORRECTION OF WORK

13.2.1 The Contractor shall promptly correct all Work rejected by the Owner or Engineer as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for the Owner's additional services made necessary thereby.

13.2.2 The Contractor shall provide a document to the Owner certifying that if within two years after the Date of Substantial Completion of the Work or designated portion thereof or within two years after acceptance by the Owner of designated equipment or within such longer



period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or requiring excessive service or maintenance or not in accordance with the Contract Documents, the Contractor shall correct it within seven (7) days after receipt of a written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such approval, which written acceptance shall specifically refer to such defect. This obligation shall survive termination of the Contract. The Owner shall give such notice promptly after discovery of the condition. The provisions of this paragraph are in addition to, and not in limitation of, the Owner's other rights and remedies hereunder and in law and equity.

13.2.3 The Contractor shall remove from the site all portions of the Work which are defective or non-conforming and which have not been corrected under Subparagraph 7.7.1, 13.2.1 and 13.2.2, unless removal is waived by the Owner in writing.

13.2.4 If the Contractor fails to correct defective or nonconforming Work as provided in Subparagraphs 7.7.1, 13.2.1 and 13.2.2, the Owner may correct it in accordance with Paragraph 3.4.

13.2.5 If the Contractor does not proceed with the correction of such defective or non-conforming Work within a reasonable time fixed by written notice from the Owner, the Owner may remove it and may store the materials or equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten days thereafter, the Owner may upon ten additional days' written notice sell such Work at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor, including compensation for the Owner's additional services made necessary thereby. If such proceeds of sale do not cover all costs which the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

13.2.6 The Contractor shall bear the cost of making good all work of the Owner or separate contractors destroyed or damaged by such correction or removal.

13.2.7 Nothing contained in this Paragraph 13.2 shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents, including Paragraph 7.7 hereof. The establishment of the time period of two years after the Date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which his 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 his obligation other than specifically to correct the Work.

### 13.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK

13.3.1 If the Owner prefers to accept defective or nonconforming Work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect a reduction in the Contract Sum where appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 14

### TERMINATION OF THE CONTRACT

#### 14.1 TERMINATION BY THE CONTRACTOR

14.1.1 If the Owner unjustifiably has not made payment upon an approved Invoice as provided in Paragraph 9.6, then the Contractor may, upon thirty (30) additional days written notice to the Owner, terminate the Contract and recover from the Owner payment for all Work executed and for any proven loss sustained upon any materials, equipment, tools, and construction equipment and machinery.

#### 14.2 TERMINATION BY THE OWNER

14.2.1 To the extent permitted by law, if the Contractor is adjudged a bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency, or if he refuses or fails, repeatedly except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he fails to make prompt proper payment to Subcontractors for materials or labor, or disregards laws, or order of any public authority having jurisdiction, or otherwise fails to comply with any provision of the Contract Documents including these Terms and Conditions, then the Owner may, without prejudice to any right or remedy and after giving the Contractor and his surety, if any, seven days' written notice, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever method he may deem expedient.

14.2.2 If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including compensation for the Owner's additional services made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The obligation to pay said amount to the Contractor or to the Owner, as the case may be, shall survive the termination of the Contract.

#### 14.3 ORDER OF PRECEDENCE

14.3.1 In the event of a conflict between these Terms and Conditions and **Section D, SPECIFICATIONS**, the Terms and Conditions shall govern. In the event of a conflict between these Terms and Conditions and the Massachusetts General Laws, the Massachusetts General Laws shall govern.

# WEST BOYLSTON MUNICIPAL LIGHTING PLANT

4 Crescent Street, West Boylston, Massachusetts 01583  
Telephone (508) 835-3681 Fax (508) 835-2952

## Goodale Park EV Charging Stations

### SUPPLEMENTAL GENERAL TERMS AND CONDITIONS

#### STATUTORY PROVISIONS FOR MASSACHUSETTS PUBLIC CONSTRUCTION CONTRACTS

THE FOLLOWING PROVISIONS ARE REQUIRED BY OR ARE INTENDED TO BE CONSISTENT WITH REQUIREMENTS OF MASSACHUSETTS STATUTES GOVERNING PUBLIC CONSTRUCTION CONTRACTS IN THE COMMONWEALTH OF MASSACHUSETTS (HEREINAFTER REFERRED TO AS THE "COMMONWEALTH"). ANY OTHER PROVISIONS REQUIRED BY STATUTE TO BE INCLUDED HEREIN SHALL BE DEEMED TO BE SO INCLUDED. IN ADDITION, THE PARTIES RECOGNIZE THAT OTHER RIGHTS, DUTIES, AND OBLIGATIONS WITH RESPECT TO PUBLIC CONSTRUCTION CONTRACTS ARE PROVIDED FOR BY STATUTE, NOTWITHSTANDING THE FACT THAT THEY ARE NOT PROVIDED FOR IN THE CONTRACT DOCUMENTS. IN CASE OF CONFLICT BETWEEN THE PROVISIONS OF THESE SUPPLEMENTARY GENERAL CONDITIONS AND OTHER PROVISIONS IN THE CONTRACT DOCUMENTS, INCLUDING THE TERMS AND CONDITIONS, THE PROVISIONS OF THESE SUPPLEMENTARY GENERAL CONDITIONS SHALL GOVERN. IN CASE OF CONFLICT BETWEEN THE PROVISIONS OF THESE SUPPLEMENTARY GENERAL CONDITIONS AND THE PROVISIONS OF ANY APPLICABLE STATUTE, THE STATUTORY PROVISIONS SHALL GOVERN. WHERE THE TERM "AWARDING AUTHORITY" APPEARS IN THE FOLLOWING PARAGRAPHS, IT SHALL BE TAKEN AS MEANING THE OWNER.

#### ARTICLE 1 PAYMENT, CONTRACT ADMINISTRATION, ETC.

##### 1.1 "OR EQUAL" CLAUSE (STATUTORY REFERENCE: M.G.L. c. 30, §39M(B)). THIS PARAGRAPH 1.1

APPLIES TO EVERY CONTRACT FOR THE CONSTRUCTION, RECONSTRUCTION OR REPAIR OF ANY PUBLIC WORK

OR FOR THE PURCHASE OF ANY MATERIAL BY THE COMMONWEALTH, ANY POLITICAL SUBDIVISION THEREOF, OR ANY COUNTY, CITY, CITY, DISTRICT OR HOUSING AUTHORITY (ABOVE CERTAIN DOLLAR

LIMITS, AS STATED IN THE STATUTE), AND TO CONTRACTS AWARDED PURSUANT TO M.G.L. c. 149, §§44A THROUGH 44I. THE SAID §§44A THROUGH 44I-I APPLY TO EVERY CONTRACT FOR THE CONSTRUCTION, RECONSTRUCTION, INSTALLATION, DEMOLITION, MAINTENANCE OR REPAIR OF ANY BUILDING BY A DEPARTMENT, AGENCY, BOARD, COMMISSION, AUTHORITY, OR OTHER INSTRUMENTALITY

OF THE COMMONWEALTH OR POLITICAL SUBDIVISION THEREOF OR TWO OR MORE SUBDIVISIONS THEREOF, BUT NOT INCLUDING THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY, ESTIMATED TO

COST MORE THAN A DOLLAR AMOUNT SET FORTH IN M.G.L. c. 149, §44A.

WHERE PRODUCTS OR MATERIALS ARE PRESCRIBED BY MANUFACTURER NAME, TRADE NAME, OR CATALOG REFERENCE, THE WORD "OR APPROVED EQUAL" SHALL BE UNDERSTOOD TO FOLLOW. AN ITEM SHALL BE CONSIDERED EQUAL TO THE ITEM SO NAMED OR DESCRIBED IF, IN THE OPINION OF THE ARCHITECT:

- A. IT IS AT LEAST EQUAL IN QUALITY, DURABILITY, APPEARANCE, STRENGTH AND DESIGN;
- B. IT PERFORMS AT LEAST EQUALLY THE FUNCTION IMPOSED IN THE GENERAL DESIGN FOR THE WORK;
- C. IT CONFORMS SUBSTANTIALLY, EVEN WITH DEVIATIONS, TO THE DETAILED REQUIREMENTS FOR THE ITEMS AS INDICATED BY THE SPECIFICATIONS.

ANY STRUCTURAL OR MECHANICAL CHANGES MADE NECESSARY TO ACCOMMODATE SUBSTITUTED EQUIPMENT UNDER THIS PARAGRAPH SHALL BE AT THE EXPENSE OF THE CONTRACTOR OR SUBCONTRACTOR RESPONSIBLE FOR THE WORK ITEM. SEE OTHER PARAGRAPHS OF THE TERMS AND CONDITIONS AND SUPPLEMENTARY CONDITIONS FOR PROCEDURES TO BE USED IN DETERMINING COMPLIANCE WITH THE STANDARDS OF THIS PARAGRAPH.

1.2 DELAY – (STATUTORY REFERENCE M.G.L. c. 30, §39O). THIS PARAGRAPH 1.3 APPLIES TO EVERY CONTRACT SUBJECT TO M.G.L. c. 30, §39M AND TO EVERY CONTRACT SUBJECT TO M.G.L. c. 149, §§44A THROUGH 44H.

EXCEPT AS OTHERWISE PROVIDED BY LAW AND BY THIS PARAGRAPH 1.2, THE CONTRACTOR SHALL NOT BE ENTITLED TO DAMAGES ON ACCOUNT OF ANY HINDRANCES OR DELAYS, AVOIDABLE OR UNAVOIDABLE; BUT IF SUCH DELAY BE OCCASIONED BY THE AWARDED AUTHORITY, THE CONTRACTOR MAY BE ENTITLED TO AN EXTENSION OF TIME ONLY, IN WHICH TO COMPLETE THE WORK, TO BE DETERMINED BY THE ARCHITECT.

(A) THE AWARDED AUTHORITY MAY ORDER THE CONTRACTOR IN WRITING TO SUSPEND, DELAY, OR INTERRUPT ALL OR ANY PART OF THE WORK FOR SUCH PERIOD OF TIME AS IT MAY DETERMINE TO BE APPROPRIATE FOR THE CONVENIENCE OF THE AWARDED AUTHORITY; PROVIDED, HOWEVER, THAT IF THERE IS A SUSPENSION, DELAY OR INTERRUPTION FOR FIFTEEN DAYS OR MORE OR DUE TO A FAILURE OF THE AWARDED AUTHORITY TO ACT WITHIN THE TIME SPECIFIED IN THIS CONTRACT, THE AWARDED AUTHORITY SHALL MAKE AN ADJUSTMENT IN THE CONTRACT PRICE FOR ANY INCREASE IN THE COST OF PERFORMANCE OF THIS CONTRACT BUT SHALL NOT INCLUDE ANY PROFIT TO THE CONTRACTOR ON SUCH INCREASE; AND PROVIDED FURTHER, THAT THE AWARDED AUTHORITY SHALL NOT MAKE ANY ADJUSTMENTS IN THE CONTRACT PRICE UNDER THIS PROVISION FOR ANY SUSPENSION, DELAY, INTERRUPTION OR FAILURE TO ACT TO THE EXTENT THAT SUCH IS DUE TO ANY CAUSE FOR WHICH THIS CONTRACT PROVIDES FOR AN EQUITABLE ADJUSTMENT OF THE CONTRACT PRICE UNDER ANY OTHER CONTRACT PROVISIONS.

(B) THE CONTRACTOR MUST SUBMIT THE AMOUNT OF A CLAIM UNDER PROVISION (A) TO THE AWARDED AUTHORITY IN WRITING AS SOON AS PRACTICABLE AFTER THE END OF THE SUSPENSION, DELAY, INTERRUPTION OR FAILURE TO ACT AND, IN ANY EVENT, NOT LATER THAN THE DATE OF

FINAL PAYMENT UNDER THIS CONTRACT, AND EXCEPT FOR COSTS DUE TO A SUSPENSION ORDER, THE AWARDING AUTHORITY SHALL NOT APPROVE ANY COSTS IN THE CLAIM INCURRED MORE THAN TWENTY DAYS BEFORE THE CONTRACTOR NOTIFIED THE AWARDING AUTHORITY IN WRITING OF THE ACT OR FAILURE TO ACT INVOLVED IN THE CLAIM.

IN THE EVENT A SUSPENSION, DELAY, INTERRUPTION OR FAILURE TO ACT OF THE AWARDING AUTHORITY INCREASES THE COST OF PERFORMANCE TO ANY SUBCONTRACTOR, THAT SUBCONTRACTOR SHALL HAVE THE SAME RIGHTS AGAINST THE CONTRACTOR FOR PAYMENT FOR AN INCREASE IN THE COST OF HIS PERFORMANCE AS PROVISIONS (A) AND (B) GIVE THE CONTRACTOR AGAINST THE AWARDING AUTHORITY, BUT NOTHING IN PROVISIONS (A) AND (B) SHALL IN ANY WAY CHANGE, MODIFY OR ALTER ANY OTHER RIGHTS WHICH THE CONTRACTOR OR THE SUBCONTRACTOR MAY HAVE AGAINST EACH OTHER.

1.3 DEVIATIONS. (STATUTORY REFERENCE: M.G.L. c. 30, §39I) THIS PARAGRAPH 1.3 APPLIES TO EVERY CONTRACT FOR THE CONSTRUCTION, ALTERATION, MAINTENANCE, REPAIR OR DEMOLITION OF, OR ADDITION TO, ANY PUBLIC BUILDING OR PUBLIC WORKS FOR THE COMMONWEALTH OR ANY POLITICAL SUBDIVISION THEREOF.

THE CONTRACTOR SHALL PERFORM ALL THE WORK REQUIRED BY THIS CONTRACT IN CONFORMITY WITH THE PLANS AND SPECIFICATIONS CONTAINED HEREIN. NO WILLFUL AND SUBSTANTIAL DEVIATION FROM SAID PLANS AND SPECIFICATIONS SHALL BE MADE UNLESS AUTHORIZED IN WRITING BY THE AWARDING AUTHORITY OR BY THE ENGINEER OR ARCHITECT IN CHARGE OF THE WORK WHO IS DULY AUTHORIZED BY THE AWARDING AUTHORITY TO APPROVE SUCH DEVIATIONS. IN ORDER TO AVOID DELAYS IN THE PROSECUTION OF THE WORK REQUIRED BY SUCH CONTRACT SUCH DEVIATION FROM THE PLANS OR SPECIFICATIONS MAY BE AUTHORIZED BY A WRITTEN ORDER OF THE AWARDING AUTHORITY OR SUCH ENGINEER OR ARCHITECT SO AUTHORIZED TO APPROVE SUCH DEVIATION. WITHIN THIRTY DAYS. THEREAFTER, SUCH WRITTEN ORDER SHALL BE CONFIRMED BY A CERTIFICATE OF THE AWARDING AUTHORITY STATING: (1) IF SUCH DEVIATION INVOLVES ANY SUBSTITUTION OR ELIMINATION OF MATERIALS, FIXTURES OR EQUIPMENT, THE REASONS WHY SUCH MATERIALS, FIXTURES OR EQUIPMENT WERE INCLUDED IN THE FIRST INSTANCE AND THE REASONS FOR SUBSTITUTION OR ELIMINATION, AND, IF THE DEVIATION IS OF ANY OTHER NATURE, THE REASONS FOR SUCH DEVIATION, GIVING JUSTIFICATION THEREFOR; (2) THAT THE SPECIFIED DEVIATION DOES NOT MATERIALLY INJURE THE PROJECT AS A WHOLE; (3) THAT EITHER THE WORK SUBSTITUTED FOR THE WORK SPECIFIED IS OF THE SAME COST AND QUALITY, OR THAT AN EQUITABLE ADJUSTMENT HAS BEEN AGREED UPON BETWEEN THE AWARDING AUTHORITY AND THE CONTRACTOR AND THE AMOUNT IN DOLLARS OF SAID ADJUSTMENT; AND (4) THAT THE DEVIATION IS IN THE BEST INTEREST OF THE AWARDING AUTHORITY.

SUCH CERTIFICATE SHALL BE SIGNED UNDER THE PENALTIES OF PERJURY AND SHALL BE A PERMANENT PART OF THE FILE RECORD OF THE WORK CONTRACTED FOR.

1.4 FINALITY OF DECISIONS BY AWARDING AUTHORITY OR ARCHITECT. (STATUTORY REFERENCE: M.G.L. c. 30, §39J). THIS PARAGRAPH 1.4 APPLIES TO EVERY CONTRACT FOR THE

CONSTRUCTION, RECONSTRUCTION, ALTERATION, REMODELING, REPAIR OR DEMOLITION OF ANY PUBLIC BUILDING OR PUBLIC WORKS BY THE COMMONWEALTH OR BY ANY COUNTY, CITY, DISTRICT, BOARD, COMMISSION, OR OTHER PUBLIC BODY, WHEN THE AMOUNT OF THE CONTRACT EXCEEDS THE AMOUNT STATED IN M.G.L. c. 30, §39J.

NOTWITHSTANDING ANY CONTRARY PROVISION OF THIS CONTRACT, NO DECISION BY THE AWARDING AUTHORITY OR BY THE ARCHITECT ON A DISPUTE, WHETHER OF FACT OR OF LAW, ARISING UNDER SAID CONTRACT SHALL BE FINAL OR CONCLUSIVE IF SUCH DECISION IS MADE IN BAD FAITH, FRAUDULENTLY, CAPRICIOUSLY, OR ARBITRARILY, IS UNSUPPORTED BY SUBSTANTIAL EVIDENCE, OR IS BASED UPON ERROR OF LAW.

1.5 DIFFERING SITE CONDITIONS. (STATUTORY REFERENCE: M.G.L. c. 30, §30N). THIS PARAGRAPH

1.5 APPLIES TO EVERY CONTRACT SUBJECT TO M.G.L, c. 30, §39M AND TO EVERY CONTRACT SUBJECT TO M.G.L. c. 149, §§44A THROUGH 44H.

IF, DURING THE PROGRESS OF THE WORK, THE CONTRACTOR OR THE AWARDING AUTHORITY DISCOVERS THAT THE ACTUAL SUBSURFACE OR LATENT PHYSICAL CONDITIONS ENCOUNTERED AT THE SITE DIFFER SUBSTANTIALLY OR MATERIALLY FROM THOSE SHOWN ON THE PLANS OR INDICATED IN THE CONTRACT DOCUMENTS, EITHER THE CONTRACTOR OR THE AWARDING AUTHORITY MAY REQUEST AN EQUITABLE ADJUSTMENT IN THE CONTRACT PRICE OF THE CONTRACT APPLYING TO WORK AFFECTED BY THE DIFFERING SITE CONDITIONS. A REQUEST FOR SUCH AN ADJUSTMENT SHALL BE IN WRITING AND SHALL BE DELIVERED BY THE PARTY MAKING SUCH CLAIM TO THE OTHER PARTY AS SOON AS POSSIBLE AFTER SUCH CONDITIONS ARE DISCOVERED. UPON RECEIPT OF SUCH A CLAIM FROM A CONTRACTOR, OR UPON ITS OWN INITIATIVE, THE AWARDING AUTHORITY SHALL MAKE AN INVESTIGATION OF SUCH PHYSICAL CONDITIONS, AND, IF THEY DIFFER SUBSTANTIALLY OR MATERIALLY FROM THOSE SHOWN ON THE PLANS OR INDICATED IN THE CONTRACT DOCUMENTS OR FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLANS AND CONTRACT DOCUMENTS AND ARE OF SUCH A NATURE AS TO CAUSE AN INCREASE OR DECREASE IN THE COST OF PERFORMANCE OF THE WORK OR A CHANGE IN THE CONSTRUCTION METHODS REQUIRED FOR THE PERFORMANCE OF THE WORK WHICH RESULTS IN AN INCREASE OR DECREASE IN THE COST OF THE WORK, THE AWARDING AUTHORITY SHALL MAKE AN EQUITABLE ADJUSTMENT IN THE CONTRACT PRICE AND THE CONTRACT SHALL BE MODIFIED IN WRITING ACCORDINGLY,

1.6 TIMELY DECISION BY AWARDING AUTHORITY (STATUTORY REFERENCE: M.G.L, c. 30, §39P).

THIS PARAGRAPH 1.6 APPLIES TO EVERY CONTRACT SUBJECT TO M.G.L. c. 30, §39M, AND TO EVERY CONTRACT SUBJECT TO M.G.L. c. 149, §§44A THROUGH 44H.

IN EVERY CASE IN WHICH THIS CONTRACT REQUIRES THE AWARDING AUTHORITY, ANY OFFICIAL, ITS ARCHITECT OR ENGINEER TO MAKE A DECISION OR INTERPRETATION OF THE SPECIFICATIONS, APPROVAL OF EQUIPMENT, MATERIAL OR ANY OTHER APPROVAL, OR PROGRESS OF THE WORK, THE DECISION SHALL BE MADE PROMPTLY AND, IN ANY EVENT, NO LATER THAN THIRTY DAYS AFTER

THE WRITTEN SUBMISSION FOR DECISION; BUT IF SUCH DECISION REQUIRES EXTENDED INVESTIGATION AND STUDY, THE AWARDING AUTHORITY, THE OFFICIAL, ARCHITECT OR ENGINEER SHALL, WITHIN THIRTY DAYS AFTER RECEIPT OF THE SUBMISSION, GIVE THE PARTY MAKING THE SUBMISSION WRITTEN NOTICE OF THE REASONS WHY THE DECISION CANNOT BE MADE WITHIN THE THIRTY DAY PERIOD AND THE DATE BY WHICH THE DECISION WILL BE MADE.

1.7 METHOD OF PAYMENT. (STATUTORY REFERENCE: M.G.L. C. 30, §39K) THIS PARAGRAPH 1.7

APPLIES TO EVERY CONTRACT FOR THE CONSTRUCTION, RECONSTRUCTION, ALTERATION, REMODELING, REPAIR OR DEMOLITION OF ANY PUBLIC BUILDING BY THE COMMONWEALTH, OR BY ANY COUNTY, CITY, CITY, DISTRICT, BOARD, COMMISSION OR OTHER PUBLIC BODY, WHEN THE AMOUNT OF THE CONTRACT EXCEEDS THE AMOUNT STATED IN M.G.L. C. 30, §39K.

1.7.1 WITHIN FIFTEEN DAYS AFTER RECEIPT FROM THE CONTRACTOR, AT THE PLACE DESIGNATED BY THE AWARDING AUTHORITY IF SUCH A PLACE IS SO DESIGNATED, OF A PERIODIC ESTIMATE REQUESTING PAYMENT OF THE AMOUNT DUE FOR THE PRECEDING MONTH, THE AWARDING AUTHORITY WILL MAKE A PERIODIC PAYMENT TO THE CONTRACTOR FOR THE WORK PERFORMED DURING THE PRECEDING MONTH AND FOR THE MATERIALS NOT PERFORMED DURING THE PRECEDING MONTH AND FOR THE MATERIALS NOT INCORPORATED IN THE WORK BUT DELIVERED AND SUITABLY STORED AT THE SITE (OR AT SOME LOCATION AGREED UPON IN WRITING) TO WHICH THE CONTRACTOR HAS TITLE OR TO WHICH A SUBCONTRACTOR HAS TITLE AND HAS AUTHORIZED THE CONTRACTOR TO TRANSFER TITLE TO THE AWARDING AUTHORITY, LESS (1) A RETENTION BASED ON ITS ESTIMATE OF THE FAIR VALUE OF ITS CLAIMS AGAINST THE CONTRACTOR AND LESS (2) A RETENTION FOR DIRECT PAYMENTS TO SUBCONTRACTORS BASED ON DEMANDS FOR SAME IN ACCORDANCE WITH THE PROVISIONS OF PARAGRAPH 1.8 OF THESE SUPPLEMENTARY GENERAL CONDITIONS, AND LESS (3) A RETENTION NOT EXCEEDING FIVE PERCENT OF THE APPROVED AMOUNT OF THE PERIODIC PAYMENT. AFTER THE RECEIPT OF A PERIODIC ESTIMATE REQUESTING FINAL PAYMENT AND WITHIN SIXTY FIVE DAYS AFTER (A) THE CONTRACTOR FULLY COMPLETES THE WORK OR SUBSTANTIALLY COMPLETES THE WORK SO THAT THE VALUE OF THE WORK REMAINING TO BE DONE IS, IN THE ESTIMATE OF THE AWARDING AUTHORITY, LESS THAN ONE PERCENT OF THE ORIGINAL CONTRACT PRICE, OR (B) THE CONTRACTOR SUBSTANTIALLY COMPLETES THE WORK AND THE AWARDING AUTHORITY TAKES POSSESSION FOR OCCUPANCY, WHICHEVER OCCURS FIRST, THE AWARDING AUTHORITY SHALL PAY THE CONTRACTOR THE ENTIRE BALANCE DUE ON THE CONTRACT LESS (1) A RETENTION BASED ON ITS ESTIMATE OF THE FAIR VALUE OF ITS CLAIMS AGAINST THE CONTRACTOR AND OF THE COST OF COMPLETING THE INCOMPLETE AND UNSATISFACTORY ITEMS OF WORK AND LESS (2) A RETENTION FOR DIRECT PAYMENTS TO SUBCONTRACTORS BASED ON DEMANDS FOR SAME IN ACCORDANCE WITH THE PROVISIONS OF PARAGRAPH 1.8 OF THESE SUPPLEMENTARY GENERAL CONDITIONS, OR BASED ON THE RECORD OF PAYMENTS BY THE CONTRACTOR TO THE SUBCONTRACTORS UNDER THIS CONTRACT IF SUCH RECORD OF PAYMENT INDICATES THAT THE CONTRACTOR HAS NOT PAID SUBCONTRACTORS AS PROVIDED IN PARAGRAPH 1.8. IF THE AWARDING AUTHORITY FAILS TO MAKE PAYMENTS AS HEREIN PROVIDED, THERE SHALL BE ADDED TO EACH SUCH PAYMENT DAILY INTEREST AT THE RATE OF THREE PERCENTAGE POINTS ABOVE THE REDISCOUNT RATE THEN

CHARGED BY THE FEDERAL RESERVE BANK OF BOSTON COMMENCING ON THE FIRST DAY AFTER SAID PAYMENT IS DUE AND CONTINUING UNTIL THE PAYMENT IS DELIVERED OR MAILED TO THE CONTRACTOR; PROVIDED, THAT NO INTEREST SHALL BE DUE, IN ANY EVENT, ON THE AMOUNT DUE ON A PERIODIC ESTIMATE FOR FINAL PAYMENT UNTIL FIFTEEN DAYS AFTER RECEIPT OF SUCH PERIODIC ESTIMATE FROM THE CONTRACTOR, AT THE PLACE DESIGNATED BY THE AWARDING AUTHORITY IF SUCH A PLACE IS SO DESIGNATED. THE CONTRACTOR AGREES TO PAY TO EACH SUBCONTRACTOR A PORTION OF ANY SUCH INTEREST PAID IN ACCORDANCE WITH THE AMOUNT DUE EACH SUBCONTRACTOR.

1.7.2 THE AWARDING AUTHORITY MAY MAKE CHANGES IN ANY PERIODIC ESTIMATE SUBMITTED BY THE CONTRACTOR, AND THE PAYMENT DUE ON SAID PERIODIC ESTIMATE SHALL BE COMPUTED IN ACCORDANCE WITH THE CHANGE SO MADE, BUT SUCH CHANGES OR ANY REQUIREMENT FOR A CORRECTED PERIODIC ESTIMATE SHALL NOT AFFECT THE DUE DATE FOR THE PERIODIC PAYMENT OR THE DATE FOR THE COMMENCEMENT OF INTEREST CHARGES ON THE AMOUNT OF THE PERIODIC PAYMENT COMPUTED IN ACCORDANCE WITH THE CHANGES MADE, AS PROVIDED HEREIN; PROVIDED, THAT THE AWARDING AUTHORITY MAY, WITHIN SEVEN DAYS AFTER RECEIPT, RETURN TO THE CONTRACTOR FOR CORRECTION, ANY PERIODIC ESTIMATE WHICH IS NOT IN THE REQUIRED FORM OR WHICH CONTAINS COMPUTATIONS NOT ARITHMETICALLY CORRECT AND, IN THAT EVENT, THE DATE OF RECEIPT OF SUCH PERIODIC ESTIMATE SHALL BE THE DATE OF RECEIPT OF THE CORRECTED PERIODIC ESTIMATE IN PROPER FORM AND WITH ARITHMETICALLY CORRECT COMPUTATIONS. THE DATE OF RECEIPT OF A PERIODIC ESTIMATE RECEIVED ON A SATURDAY SHALL BE THE FIRST WORKING DAY THEREAFTER.

1.7.3 ALL PERIODIC ESTIMATES SHALL BE SUBMITTED TO THE AWARDING AUTHORITY, OR TO ITS DESIGNEE AS SET FORTH IN WRITING TO THE CONTRACTOR, AND THE DATE OF RECEIPT BY THE AWARDING AUTHORITY OR ITS DESIGNEE SHALL BE MARKED ON THE ESTIMATE. ALL SUBTRADE AND EACH SUB SUBTRADE LISTED IN SUB BID FORM AS REQUIRED BY SPECIFICATIONS AND A COLUMN LISTING THE AMOUNT PAID TO EACH SUBCONTRACTOR AND SUB SUBCONTRACTOR AS OF THE DATE THE PERIODIC ESTIMATE IS FLED. THE PERSON MAKING PAYMENT FOR THE AWARDING AUTHORITY SHALL ADD THE DAILY INTEREST PROVIDED FOR HEREIN TO EACH PAYMENT FOR EACH DAY BEYOND THE DUE DATE BASED ON THE DATE OF RECEIPT MARKED ON THE ESTIMATE.

1.7.4 A CERTIFICATE OF THE ARCHITECT TO THE EFFECT THAT THE CONTRACTOR HAS FULLY OR SUBSTANTIALLY . COMPLETED THE WORK SHALL, SUBJECT TO THE PROVISIONS OF PARAGRAPH 1.4 OF THESE SUPPLEMENTARY GENERAL CONDITIONS, BE CONCLUSIVE FOR THE PURPOSES OF THIS PARAGRAPH 1.7.

1.8 DIRECT PAYMENT. (STATUTORY REFERENCE: M.G.L. C. 30, §39F) THIS PARAGRAPH 1.8 APPLIES TO EVERY CONTRACT AWARDED PURSUANT TO M.G.L. C, 149, §§44A THROUGH 44H, AND (WITH THE EXCEPTION OF SUBPARAGRAPH 1.8.9) TO EVERY CONTRACT AWARDED PURSUANT TO M.G.L. C. 30, §39M.

1.8.1 FORTHWITH AFTER THE CONTRACTOR RECEIVES PAYMENT ON ACCOUNT OF A PERIODIC ESTIMATE, THE CONTRACTOR SHALL PAY TO EACH SUBCONTRACTOR THE AMOUNT PAID FOR THE



LABOR PERFORMED AND THE MATERIALS FURNISHED BY THAT SUBCONTRACTOR, LESS ANY AMOUNT SPECIFIED IN ANY COURT PROCEEDINGS BARRING SUCH PAYMENT AND ALSO LESS ANY AMOUNT CLAIMED DUE FROM THE SUBCONTRACTOR BY THE CONTRACTOR.

1.8.2 NOT LATER THAN THE SIXTY FIFTH DAY AFTER EACH SUBCONTRACTOR SUBSTANTIALLY COMPLETES HIS WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, THE ENTIRE BALANCE DUE UNDER THE SUBCONTRACT, LESS AMOUNTS RETAINED BY THE AWARDING AUTHORITY AS THE ESTIMATED COST OF COMPLETING THE INCOMPLETE AND UNSATISFACTORY ITEMS OF WORK, SHALL BE DUE THE SUBCONTRACTOR; AND THE AWARDING AUTHORITY SHALL PAY THAT AMOUNT TO THE CONTRACTOR. THE CONTRACTOR SHALL FORTHWITH PAY TO THE SUBCONTRACTOR THE FULL AMOUNT RECEIVED FROM THE AWARDING AUTHORITY LESS ANY AMOUNT SPECIFIED IN ANY COURT PROCEEDINGS BARRING SUCH PAYMENT AND ALSO LESS ANY AMOUNT CLAIMED DUE FROM THE SUBCONTRACTOR BY THE CONTRACTOR.

1.8.3 EACH PAYMENT MADE BY THE AWARDING AUTHORITY TO THE CONTRACTOR PURSUANT TO SUBPARAGRAPHS 1.8.1 AND 1.8.2 OF THIS PARAGRAPH 1.8 FOR THE LABOR PERFORMED AND THE MATERIALS FURNISHED BY A SUBCONTRACTOR SHALL BE MADE TO THE CONTRACTOR FOR THE ACCOUNT OF THAT SUBCONTRACTOR; AND THE AWARDING AUTHORITY SHALL TAKE REASONABLE STEPS TO COMPEL THE CONTRACTOR TO MAKE EACH SUCH PAYMENT TO EACH SUCH SUBCONTRACTOR. IF THE AWARDING AUTHORITY HAS RECEIVED A DEMAND FOR DIRECT PAYMENT FROM A SUBCONTRACTOR FOR ANY AMOUNT WHICH HAS ALREADY BEEN INCLUDED IN A PAYMENT TO THE CONTRACTOR OR WHICH IS TO BE INCLUDED IN A PAYMENT TO THE CONTRACTOR FOR PAYMENT TO THE SUBCONTRACTOR AS PROVIDED IN SUBPARAGRAPHS 1.8.1 AND 1.8.2, THE AWARDING AUTHORITY SHALL ACT UPON THE DEMAND AS PROVIDED IN THIS PARAGRAPH 1.8.

1.8.4 IF, WITHIN SEVENTY DAYS AFTER THE SUBCONTRACTOR HAS SUBSTANTIALLY COMPLETED THE SUBCONTRACT WORK, THE SUBCONTRACTOR HAS NOT RECEIVED FROM THE CONTRACTOR THE BALANCE DUE UNDER THE SUBCONTRACT INCLUDING ANY AMOUNT DUE FOR EXTRA LABOR AND MATERIALS FURNISHED TO THE CONTRACTOR, LESS ANY AMOUNT RETAINED BY THE AWARDING AUTHORITY AS THE ESTIMATED COST OF COMPLETING THE INCOMPLETE AND UNSATISFACTORY ITEMS OF WORK, THE SUBCONTRACTOR MAY DEMAND DIRECT PAYMENT OF THAT BALANCE FROM THE AWARDING AUTHORITY. THE DEMAND SHALL BE BY SWORN STATEMENT DELIVERED TO OR SENT BY CERTIFIED MAIL TO THE AWARDING AUTHORITY, AND A COPY SHALL BE DELIVERED TO OR SENT BY CERTIFIED MAIL TO THE CONTRACTOR AT THE SAME TIME. THE DEMAND SHALL CONTAIN A DETAILED BREAKDOWN OF THE BALANCE DUE UNDER THE SUBCONTRACT AND ALSO A STATEMENT OF THE STATUS OF COMPLETION OF THE SUBCONTRACT WORK. ANY DEMAND MADE AFTER SUBSTANTIAL COMPLETION OF THE SUBCONTRACT WORK SHALL BE VALID EVEN IF DELIVERED OR MAILED PRIOR TO THE SEVENTIETH DAY AFTER THE SUBCONTRACTOR HAS SUBSTANTIALLY COMPLETED THE SUBCONTRACT WORK. WITHIN TEN DAYS AFTER THE SUBCONTRACTOR HAS DELIVERED OR SO MAILED A COPY TO THE CONTRACTOR, THE CONTRACTOR MAY REPLY TO THE DEMAND. THE REPLY SHALL BE A SWORN STATEMENT DELIVERED TO OR SENT BY CERTIFIED MAIL TO THE AWARDING AUTHORITY, AND A COPY SHALL BE DELIVERED TO OR SENT BY CERTIFIED MAIL TO THE SUBCONTRACTOR AT THE SAME TIME. THE REPLY SHALL CONTAIN A DETAILED BREAKDOWN OF THE BALANCE DUE UNDER THE SUBCONTRACT, INCLUDING ANY AMOUNT DUE FOR EXTRA LABOR AND MATERIALS FURNISHED TO THE CONTRACTOR AND OF THE AMOUNT DUE FOR EACH CLAIM MADE BY THE CONTRACTOR AGAINST THE SUBCONTRACTOR.

1.8.5 WITHIN FIFTEEN DAYS AFTER RECEIPT OF THE DEMAND BY THE AWARDING AUTHORITY, BUT IN NO EVENT PRIOR TO THE SEVENTIETH DAY AFTER SUBSTANTIAL COMPLETION OF THE SUBCONTRACT WORK, THE AWARDING AUTHORITY SHALL MAKE DIRECT PAYMENT TO THE SUBCONTRACTOR OF THE BALANCE DUE UNDER THE SUBCONTRACT, INCLUDING ANY AMOUNT DUE FOR EXTRA LABOR AND MATERIALS FURNISHED TO THE CONTRACTOR, LESS ANY AMOUNT (I) RETAINED BY THE AWARDING AUTHORITY AS THE ESTIMATED COST OF COMPLETING THE INCOMPLETE OR UNSATISFACTORY ITEMS OF WORK, (II) SPECIFIED IN ANY COURT PROCEEDINGS BARRING SUCH PAYMENT, OR (III) DISPUTED BY THE CONTRACTOR IN THE SWORN REPLY; PROVIDED THAT THE AWARDING AUTHORITY SHALL NOT DEDUCT FROM A DIRECT PAYMENT ANY AMOUNT AS PROVIDED IN PART (III) IF THE REPLY IS NOT SWORN TO, OR FOR WHICH THE SWORN REPLY DOES NOT CONTAIN THE DETAILED BREAKDOWN REQUIRED BY SUBPARAGRAPH 1.8.4. THE AWARDING AUTHORITY SHALL MAKE FURTHER DIRECT PAYMENTS TO THE SUBCONTRACTOR FORTHWITH AFTER THE REMOVAL OF THE BASIS FOR DEDUCTION FROM DIRECT PAYMENTS MADE AS PROVIDED IN PARTS (I) AND (II) OF THIS SUBPARAGRAPH.

1.8.6 THE AWARDING AUTHORITY SHALL FORTHWITH DEPOSIT THE AMOUNTS DEDUCTED FROM A DIRECT PAYMENT AS PROVIDED IN PART (III) OF SUBPARAGRAPH 1.8.5 IN AN INTEREST BEARING JOINT ACCOUNT IN THE NAMES OF THE CONTRACTOR AND THE SUBCONTRACTOR IN A BANK IN MASSACHUSETTS SELECTED BY THE AWARDING AUTHORITY OR AGREED UPON BY THE CONTRACTOR AND THE SUBCONTRACTOR AND SHALL NOTIFY THE CONTRACTOR AND THE SUBCONTRACTOR OF THE DATE OF THE DEPOSIT AND THE BANK RECEIVING THE DEPOSIT. THE BANK SHALL PAY THE AMOUNT IN THE ACCOUNT, INCLUDING ACCRUED INTEREST, AS PROVIDED IN AN AGREEMENT BETWEEN THE CONTRACTOR AND THE SUBCONTRACTOR OR AS DETERMINED BY DECREE OF A COURT OF COMPETENT JURISDICTION.

1.8.7 ALL DIRECT PAYMENTS AND ALL DEDUCTIONS FROM DEMANDS FOR DIRECT PAYMENTS DEPOSITED IN AN INTEREST BEARING ACCOUNT OR ACCOUNTS IN A BANK PURSUANT TO SUBPARAGRAPH 1.8.6 SHALL BE MADE OUT OF AMOUNTS PAYABLE TO THE CONTRACTOR AT THE TIME OF RECEIPT OF A DEMAND FOR DIRECT PAYMENT FROM A SUBCONTRACTOR AND OUT OF AMOUNTS WHICH LATER BECOME PAYABLE TO THE CONTRACTOR AND IN THE ORDER OF RECEIPT OF SUCH DEMANDS FROM SUBCONTRACTORS. ALL DIRECT PAYMENTS SHALL DISCHARGE THE OBLIGATION OF THE AWARDING AUTHORITY TO THE CONTRACTOR TO THE EXTENT OF SUCH PAYMENT.

1.8.8 THE AWARDING AUTHORITY SHALL DEDUCT FROM PAYMENTS TO A CONTRACTOR AMOUNTS WHICH, TOGETHER WITH THE DEPOSITS IN INTEREST BEARING ACCOUNTS PURSUANT TO SUBPARAGRAPH 1.8.6, ARE SUFFICIENT TO SATISFY ALL UNPAID BALANCES OF DEMANDS FOR DIRECT PAYMENT RECEIVED FROM SUBCONTRACTORS. ALL SUCH AMOUNTS SHALL BE EARMARKED FOR SUCH DIRECT PAYMENTS, AND THE SUBCONTRACTORS SHALL HAVE A RIGHT IN SUCH DEDUCTIONS PRIOR TO ANY CLAIMS AGAINST SUCH AMOUNTS BY CREDITORS OF THE CONTRACTOR.

1.8.9 IF THE SUBCONTRACTOR DOES NOT RECEIVE PAYMENT AS PROVIDED IN SUBPARAGRAPH 1.8.1 OR IF THE CONTRACTOR DOES NOT SUBMIT A PERIODIC ESTIMATE FOR THE VALUE OF THE LABOR OR MATERIALS PERFORMED OR FURNISHED BY THE SUBCONTRACTOR AND THE SUBCONTRACTOR DOES NOT RECEIVE PAYMENT FOR SAME WHEN DUE LESS THE DEDUCTIONS

PROVIDED FOR IN SUBPARAGRAPH 1.8.1, THE SUBCONTRACTOR MAY DEMAND DIRECT PAYMENT BY FOLLOWING THE PROCEDURE IN SUBPARAGRAPH 1.8.4 AND THE CONTRACTOR MAY FILE A SWORN REPLY AS PROVIDED IN THAT SAME SUBPARAGRAPH. A DEMAND MADE AFTER THE FIRST DAY OF THE MONTH FOLLOWING THAT FOR WHICH THE SUBCONTRACTOR PERFORMED OR FURNISHED THE LABOR AND MATERIALS FOR WHICH THE SUBCONTRACTOR SEEKS PAYMENT SHALL BE VALID EVEN IF DELIVERED OR MAILED PRIOR TO THE TIME PAYMENT WAS DUE ON A PERIODIC ESTIMATE FROM THE CONTRACTOR. THEREAFTER THE AWARDING AUTHORITY SHALL PROCEED AS PROVIDED IN SUBPARAGRAPHS 1.8.5, 1.8.6 AND 1.8.8.

1.8.10 ANY ASSIGNMENT BY A SUBCONTRACTOR OF THE RIGHTS UNDER THIS SECTION TO A SURETY COMPANY FURNISHING A BOND UNDER THE PROVISIONS OF M.G.L. c. 149, §29 SHALL BE INVALID. THE ASSIGNMENT AND SUBROGATION RIGHTS OF THE SURETY TO AMOUNTS INCLUDED IN A DEMAND FOR DIRECT PAYMENT WHICH ARE IN THE POSSESSION OF THE AWARDING AUTHORITY OR WHICH ARE ON DEPOSIT PURSUANT TO SUBPARAGRAPH 1.8.6 SHALL BE SUBORDINATE TO THE RIGHTS OF ALL SUBCONTRACTORS WHO ARE ENTITLED TO BE PAID UNDER THIS SECTION AND WHO HAVE NOT BEEN PAID IN FULL.

1.8.11 "SUBCONTRACTOR" AS USED IN THIS PARAGRAPH 1.8 FOR CONTRACTS AWARDED AS PROVIDED IN M.G.L. c. 149, §§44A THROUGH 44H, INCLUSIVE, SHALL MEAN A PERSON WHO FILES A SUB BID AND RECEIVES A SUBCONTRACT AS A RESULT OF THAT FILED SUB BID OR WHO IS APPROVED BY THE AWARDING AUTHORITY IN WRITING AS A PERSON PERFORMING LABOR OR BOTH PERFORMING LABOR AND FURNISHING MATERIALS PURSUANT TO A CONTRACT WITH THE CONTRACTOR, (II) FOR CONTRACTS AWARDED AS PROVIDED IN M.G.L. c. 30, §39M, PARAGRAPH (A) SHALL MEAN A PERSON APPROVED BY THE AWARDING AUTHORITY IN WRITING AS A PERSON PERFORMING LABOR OR BOTH PERFORMING LABOR AND FURNISHING MATERIALS PURSUANT TO A CONTRACT WITH THE GENERAL CONTRACTOR, AND (III) FOR CONTRACTS WITH THE COMMONWEALTH NOT AWARDED AS PROVIDED IN M.G.L. c. 149, §§44A THROUGH 44H, INCLUSIVE, SHALL ALSO MEAN A PERSON CONTRACTING WITH THE CONTRACTOR TO SUPPLY MATERIALS USED OR EMPLOYED IN A PUBLIC WORKS PROJECT FOR A PRICE IN EXCESS OF THE AMOUNT STATED IN M.G.L. c. 30, §39F.

1.8.12 A CONTRACTOR OR A SUBCONTRACTOR SHALL ENFORCE A CLAIM TO ANY PORTION OF THE AMOUNT OF A DEMAND FOR DIRECT PAYMENT DEPOSITED AS PROVIDED IN SUBPARAGRAPH 1.8.6 BY A PETITION IN EQUITY IN THE SUPERIOR COURT AGAINST THE OTHER AND THE BANK SHALL NOT BE A NECESSARY PARTY. A SUBCONTRACTOR SHALL ENFORCE A CLAIM FOR DIRECT PAYMENT OR A RIGHT TO REQUIRE A DEPOSIT AS PROVIDED IN SUBPARAGRAPH 1.8.6 BY A PETITION IN EQUITY IN THE SUPERIOR COURT AGAINST THE AWARDING AUTHORITY AND THE CONTRACTOR SHALL NOT BE A NECESSARY PARTY. UPON MOTION OF ANY PARTY THE COURT SHALL ADVANCE FOR SPEEDY TRIAL ANY PETITION FILED AS PROVIDED IN THIS PARAGRAPH. THE COURT SHALL NOT CONSOLIDATE FOR TRIAL THE PETITION OF ANY SUBCONTRACTOR WITH THE PETITION OF ONE OR MORE SUBCONTRACTORS OR THE SAME GENERAL CONTRACT UNLESS THE COURT FINDS THAT A SUBSTANTIAL PORTION OF THE EVIDENCE OF THE SAME EVENTS DURING THE COURSE OF CONSTRUCTION (OTHER THAN THE FACT THAT THE CLAIMS SOUGHT TO BE CONSOLIDATED ARISE UNDER THE SAME GENERAL CONTRACT) IS APPLICABLE TO THE PETITIONS SOUGHT TO BE CONSOLIDATED AND THAT SUCH CONSOLIDATION WILL PREVENT UNNECESSARY DUPLICATION OF EVIDENCE. A DECREE IN ANY SUCH PROCEEDING SHALL NOT INCLUDE INTEREST ON THE DISPUTED

AMOUNT DEPOSITED IN EXCESS OF THE INTEREST EARNED FOR THE PERIOD OF ANY SUCH DEPOSIT. NO PERSON EXCEPT A SUBCONTRACTOR FILING A DEMAND FOR DIRECT PAYMENT FOR WHICH NO FUNDS DUE THE CONTRACTOR ARE AVAILABLE FOR DIRECT PAYMENT SHALL HAVE A RIGHT TO FILE A PETITION IN A COURT OF EQUITY AGAINST THE AWARDING AUTHORITY CLAIMING A DEMAND FOR DIRECT PAYMENT IS PREMATURE, AND SUCH SUBCONTRACTOR MUST FILE THE PETITION BEFORE THE AWARDING AUTHORITY HAS MADE A DIRECT PAYMENT TO THE SUBCONTRACTOR AND HAS MADE A DEPOSIT OF THE DISPUTED PORTION AS PROVIDED IN PART (III) OF SUBPARAGRAPH 1.8.5 AND IN SUBPARAGRAPH 1.8.6.

1.8.13 IN ANY PETITION TO COLLECT ANY CLAIM FOR WHICH A SUBCONTRACTOR HAS FILED A DEMAND FOR DIRECT PAYMENT THE COURT SHALL, UPON MOTION OF THE CONTRACTOR, REDUCE BY THE AMOUNT OF ANY DEPOSIT OF A DISPUTED AMOUNT BY THE AWARDING AUTHORITY AS PROVIDED IN PART (III) OF SUBPARAGRAPH 1.8.5 AND IN SUBPARAGRAPH 1.8.6 ANY AMOUNT HELD UNDER A TRUSTEE WRIT OR PURSUANT TO A RESTRAINING ORDER.

## ARTICLE 2 WAGES AND EMPLOYMENT PRACTICES

### 2.1 PREFERENCE TO VETERANS AND CITIZENS IN PUBLIC WORK: RATE OF WAGES.

(STATUTORY

REFERENCE: M.G.L. c. 149, §26) THIS PARAGRAPH APPLIES TO EVERY CONTRACT OR SUBCONTRACT

FOR THE CONSTRUCTION OF PUBLIC WORKS BY THE COMMONWEALTH OR BY A COUNTY, CITY OR DISTRICT.

2.1.1 IN THE EMPLOYMENT OF MECHANICS AND APPRENTICES, TEAMSTERS, CHAUFFEURS AND LABORERS, PREFERENCE SHALL FIRST BE GIVEN TO CITIZENS OF THE COMMONWEALTH WHO HAVE BEEN RESIDENTS OF THE COMMONWEALTH FOR AT LEAST SIX MONTHS AT THE COMMENCEMENT OF THEIR EMPLOYMENT, WHO ARE VETERANS AS DEFINED IN M.G.L. c. 4, §7, CLAUSE 43, AND WHO ARE QUALIFIED TO PERFORM THE WORK TO WHICH THE EMPLOYMENT RELATES; AND SECONDLY, TO CITIZENS OF THE COMMONWEALTH GENERALLY WHO HAVE BEEN RESIDENTS OF THE COMMONWEALTH FOR AT LEAST SIX MONTHS AT THE COMMENCEMENT OF THEIR EMPLOYMENT, AND IF THEY CANNOT BE OBTAINED IN SUFFICIENT NUMBERS, THEN TO CITIZENS OF THE UNITED STATES, AND EVERY CONTRACT FOR SUCH WORK SHALL CONTAIN A PROVISION TO THIS EFFECT. EACH COUNTY, CITY OR DISTRICT IN THE CONSTRUCTION OF PUBLIC WORKS, OR PERSONS CONTRACTING OR SUBCONTRACTING FOR SUCH WORKS, SHALL GIVE PREFERENCE TO VETERANS AND CITIZENS WHO ARE RESIDENTS OF SUCH COUNTY, CITY OR DISTRICT.

2.1.2 THE RATE PER HOUR OF THE WAGES PAID TO SAID MECHANICS AND APPRENTICES, TEAMSTERS, CHAUFFEURS AND LABORERS IN THE CONSTRUCTION OF PUBLIC WORKS SHALL NOT BE LESS THAN THE RATE OR RATES OF WAGES TO BE DETERMINED BY THE COMMISSIONER OF LABOR AND INDUSTRIES AS HEREINAFTER PROVIDED; PROVIDED, THAT THE WAGES PAID TO LABORERS EMPLOYED ON SAID WORKS SHALL NOT BE LESS THAN THOSE PAID TO LABORERS IN THE MUNICIPAL SERVICE OF THE CITY WHERE SAID WORKS ARE BEING CONSTRUCTED; PROVIDED, FURTHER, THAT WHERE THE SAME PUBLIC WORK IS TO BE CONSTRUCTED IN TWO OR MORE CITIES, THE WAGES PAID TO LABORERS SHALL NOT BE LESS THAN THOSE PAID TO LABORERS IN THE MUNICIPAL SERVICE OF THE CITY PAYING THE HIGHEST RATE; PROVIDED FURTHER, THAT IF, IN ANY OF THE CITIES WHERE

THE WORKS ARE TO BE CONSTRUCTED, A WAGE RATE OR WAGE RATES HAVE BEEN ESTABLISHED IN CERTAIN TRADES AND OCCUPATIONS BY COLLECTIVE AGREEMENTS OR UNDERSTANDINGS BETWEEN ORGANIZED LABOR AND EMPLOYERS, THE RATE OR RATES TO BE PAID ON SAID WORKS SHALL NOT BE LESS THAN THE RATES SO ESTABLISHED; PROVIDED, FURTHER, THAT IN CITIES WHERE NO SUCH RATE OR RATES HAVE BEEN SO ESTABLISHED, THE WAGES PAID TO MECHANICS, TEAMSTERS, CHAUFFEURS AND LABORERS ON PUBLIC WORKS, SHALL NOT BE LESS THAN THE WAGES PAID TO THE EMPLOYEES IN THE SAME TRADES AND OCCUPATIONS BY PRIVATE EMPLOYERS ENGAGED IN THE CONSTRUCTION INDUSTRY. THIS SECTION SHALL ALSO APPLY TO REGULAR EMPLOYEES OF THE COMMONWEALTH OR A COUNTY, CITY OR DISTRICT, WHEN SUCH EMPLOYEES ARE EMPLOYED IN THE CONSTRUCTION, ADDITION TO OR ALTERATION OF PUBLIC BUILDINGS FOR WHICH SPECIAL APPROPRIATIONS OF MORE THAN ONE THOUSAND DOLLARS ARE PROVIDED, PAYMENTS BY EMPLOYERS TO HEALTH AND WELFARE PLANS, PENSION PLANS AND SUPPLEMENTARY UNEMPLOYMENT BENEFIT PLANS UNDER COLLECTIVE BARGAINING AGREEMENTS OR UNDERSTANDINGS BETWEEN ORGANIZED LABOR AND EMPLOYERS SHALL BE INCLUDED FOR THE PURPOSE OF ESTABLISHING MINIMUM WAGE RATES AS HEREIN PROVIDED.

2.2 LIST OF JOBS; CLASSIFICATION; DETERMINATION OF RATE OF WAGES; SCHEDULE. (STATUTORY REFERENCE: M.G.L. c. 149, §27) THIS PARAGRAPH APPLIES TO EVERY CONTRACT OR SUBCONTRACT FOR THE CONSTRUCTION OF PUBLIC WORKS BY THE COMMONWEALTH, OR BY A COUNTY, CITY OR DISTRICT.

THE COMMISSIONER OF LABOR AND INDUSTRIES SHALL PREPARE, FOR THE USE OF SUCH PUBLIC OFFICIALS OR PUBLIC BODIES WHOSE DUTY IT SHALL BE TO CAUSE PUBLIC WORKS TO BE CONSTRUCTED, A LIST OF THE SEVERAL JOBS USUALLY PERFORMED ON VARIOUS TYPES OF PUBLIC WORKS UPON WHICH MECHANICS AND APPRENTICES, TEAMSTERS, CHAUFFEURS AND LABORERS ARE EMPLOYED. THE COMMISSIONER SHALL CLASSIFY SAID JOBS, AND HE MAY REVISE SUCH CLASSIFICATIONS FROM TIME TO TIME, AS HE MAY DEEM ADVISABLE. PRIOR TO AWARDED A CONTRACT FOR THE CONSTRUCTION OF PUBLIC WORKS, SAID PUBLIC OFFICIAL OR PUBLIC BODY SHALL SUBMIT TO THE COMMISSIONER A LIST OF THE JOBS UPON WHICH MECHANICS ARE TO BE EMPLOYED, AND SHALL REQUEST THE COMMISSIONER TO DETERMINE THE RATE OF WAGES TO BE PAID ON EACH JOB. THE COMMISSIONER, SUBJECT TO THE PROVISIONS OF PARAGRAPH 2.1 OF THESE SUPPLEMENTARY GENERAL CONDITIONS, SHALL PROCEED FORTHWITH TO DETERMINE THE SAME, AND SHALL FURNISH SAID OFFICIAL OR PUBLIC BODY WITH A SCHEDULE OF SUCH RATE OR RATES OF WAGES AS SOON AS SAID DETERMINATION SHALL HAVE BEEN MADE. IN ADVERTISING OR CALLING FOR BIDS FOR SAID WORKS, THE AWARDED OFFICIAL OR PUBLIC BODY SHALL INCORPORATE SAID SCHEDULE IN THE ADVERTISEMENT OR CALL FOR BIDS BY AN APPROPRIATE REFERENCE THERETO, AND SHALL FURNISH A COPY OF SAID SCHEDULE WITHOUT COST, TO ANY PERSON REQUESTING THE SAME. SAID SCHEDULE SHALL BE MADE A PART OF THE CONTRACT FOR SAID WORKS AND SHALL CONTINUE TO THE MINIMUM RATE OR RATES OF WAGES FOR SAID EMPLOYEES DURING THE LIFE OF THE CONTRACT. ANY PERSON ENGAGED IN THE CONSTRUCTION OF SAID WORKS SHALL CAUSE A LEGIBLE COPY OF SAID SCHEDULE TO BE KEPT POSTED IN A CONSPICUOUS PLACE AT THE SITE OF SAID WORKS DURING THE LIFE OF THE CONTRACT. THE AFORESAID RATES OF WAGES IN THE SCHEDULE OF WAGE RATES SHALL INCLUDE PAYMENTS BY EMPLOYERS TO HEALTH AND WELFARE PLANS, PENSION PLANS AND SUPPLEMENTARY UNEMPLOYMENT BENEFIT PLANS AS PROVIDED IN THE PREVIOUS SECTION, AND SUCH PAYMENTS SHALL BE CONSIDERED AS PAYMENTS TO PERSONS UNDER THIS SECTION PERFORMING WORK AS

HEREIN PROVIDED. ANY EMPLOYER ENGAGED IN THE CONSTRUCTION OF SUCH WORKS WHO DOES NOT MAKE PAYMENTS TO A HEALTH AND WELFARE PLAN, A PENSION PLAN AND A SUPPLEMENTARY UNEMPLOYMENT BENEFIT PLAN, WHERE SUCH PAYMENTS ARE INCLUDED IN SAID RATES OF WAGES, SHALL PAY THE AMOUNT OF SAID PAYMENTS DIRECTLY TO EACH EMPLOYEE ENGAGED IN SAID CONSTRUCTION. NOTE: THE AWARDING AUTHORITY DOES NOT GUARANTEE THE ACCURACY OF ANY SCHEDULE OF WAGE RATES FURNISHED TO THE CONTRACTOR HEREUNDER, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE PREVAILING WAGES IN THE AREA WHERE THE WORK WILL BE PERFORMED.

2.3 EMPLOYMENT RECORDS TO BE KEPT BY CONTRACTOR, SUBCONTRACTORS; STATEMENT OF COMPLIANCE.

(STATUTORY REFERENCE: M.G.L. c. 149, §27B) THIS PARAGRAPH APPLIES TO EVERY CONTRACT OR SUBCONTRACT FOR THE CONSTRUCTION OF PUBLIC WORKS BY THE COMMONWEALTH, OR BY A COUNTRY, CITY OR DISTRICT.

EVERY CONTRACTOR, SUBCONTRACTOR OR PUBLIC BODY ENGAGED IN SAID PUBLIC WORKS TO WHICH PARAGRAPH 2.2 OF THESE SUPPLEMENTARY GENERAL CONDITIONS APPLIES SHALL KEEP A TRUE AND ACCURATE RECORD OF ALL MECHANICS AND APPRENTICES, TEAMSTERS, CHAUFFEURS AND LABORERS EMPLOYED THEREON, SHOWING THE NAME, ADDRESS AND OCCUPATIONAL CLASSIFICATION OF EACH SUCH EMPLOYEE, AND SHALL FURNISH TO THE COMMISSIONER OF LABOR AND INDUSTRIES, UPON HIS REQUEST, A COPY OF SAID RECORD, SIGNED BY THE EMPLOYER OR HIS AUTHORIZED AGENT UNDER THE PENALTIES OF PERJURY. SUCH RECORDS SHALL BE OPEN TO INSPECTION BY ANY AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT OF LABOR AND INDUSTRIES AT ANY REASONABLE TIME, AND AS OFTEN AS MAY BE NECESSARY.

EACH SUCH CONTRACTOR, SUBCONTRACTOR OR PUBLIC BODY SHALL PRESERVE ITS PAYROLL RECORDS FOR A PERIOD OF THREE YEARS FROM THE DATE OF COMPLETION OF THE CONTRACT.

EACH SUCH CONTRACTOR, SUBCONTRACTOR OR PUBLIC BODY SHALL FURNISH TO THE COMMISSIONER OF LABOR AND INDUSTRIES WITHIN FIFTEEN DAYS AFTER COMPLETION OF ITS PORTION OF THE WORK A STATEMENT, EXECUTED BY THE CONTRACTOR, SUBCONTRACTOR, OR A PUBLIC BODY WHO SUPERVISES THE PAYMENT OF WAGES, IN THE FOLLOWING FORM:

# **WBMLP: Goodale Park EV Charging Stations**

WBMLP 4 Crescent Street, West Boylston, Massachusetts 01583

Telephone (508) 835-3681

## **General and Technical Specifications**

DOCUMENT 004373 - PROPOSED SCHEDULE OF VALUES FORM

PART 1 - GENERAL

1.1 BID FORM SUPPLEMENT

- A. A completed Proposed Schedule of Values form is required to be attached to the Bid Form.

1.2 PROPOSED SCHEDULE OF VALUES FORM

- A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of five percent of the Contract Sum.
- B. Arrange schedule of values using AIA Document G703-1992.
  - 1. Copies of AIA standard forms may be obtained from the American Institute of Architects; <https://www.aiacontracts.org/library>; (800) 942-7732.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 004373

PROPOSED SCHEDULE OF VALUES FORM



## SECTION 012500 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Document 002600 "Procurement Substitution Procedures" for requirements for substitution requests prior to award of Contract.
  - 2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit documentation identifying 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 form acceptable to Architect.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
    - b. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - c. Product Data, including drawings and descriptions of products and

## SUBSTITUTION PROCEDURES

- fabrication and installation procedures.
  - d. Samples, where applicable or requested.
  - e. Certificates and qualification data, where applicable or requested.
  - f. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
  - g. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
  - h. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
  - i. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
  - j. Cost information, including a proposal of change, if any, in the Contract Sum.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within days of receipt of request, or days of receipt of additional information or documentation, whichever is later.
- a. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

#### 1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

#### 1.5 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

#### 1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

#### SUBSTITUTION PROCEDURES

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- b. Requested substitution provides sustainable design characteristics that specified product provided for compliance with ASHRAE 189.1 requirements.
- c. Requested substitution provides sustainable design characteristics that specified product provided for compliance with Green Globes requirements.
- d. Requested substitution will not adversely affect Contractor's construction schedule.
- e. Requested substitution is compatible with other portions of the Work.
- f. Requested substitution has been coordinated with other portions of the Work.
- g. Requested substitution provides specified warranty.

B. Substitutions for Convenience:

1. Not allowed.
2. Architect will consider requests for substitution if received within 30 days after . Requests received after that time may be considered or rejected at discretion of Architect.
  - a. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - 1) 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 Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - 2) Requested substitution does not require extensive revisions to the Contract Documents.
    - 3) Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - 4) Substitution request is fully documented and properly submitted.
    - 5) Requested substitution is compatible with other portions of the Work.
    - 6) Requested substitution has been coordinated with other portions of the Work.
    - 7) Requested substitution provides specified warranty.

PART 2 - PRODUCTS (Not Used)  
PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SUBSTITUTION PROCEDURES

## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
4. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and Final Completion construction photographs.
5. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
6. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

#### 1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and Construction Manager and additional time for handling and reviewing

## SUBMITTAL PROCEDURES

submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal Category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Architect's and Construction Manager's final release or approval.
  - g. Scheduled dates for purchasing.
  - h. Scheduled date of fabrication.
  - i. Scheduled dates for installation.
  - j. Activity or event number.

#### 1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.

#### SUBMITTAL PROCEDURES

15. Other necessary identification.
  16. Remarks.
  17. Signature of transmitter.
- B. Options: Identify options requiring selection by Architect.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect and Construction Manager on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

## 1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.
    - a. Architect, through Construction Manager, will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
  2. Paper: Prepare submittals in paper form and deliver to Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit

## SUBMITTAL PROCEDURES

submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 7 days for review of each resubmittal.
  4. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 12 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
    - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Construction Manager.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked with approval notation from Architect's and Construction Manager's action stamp.
- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's and Construction Manager's action stamp.

## 1.6 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.

## SUBMITTAL PROCEDURES

- e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. Submit Product Data before Shop Drawings, and before or concurrently with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
  1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Schedules.
    - b. Compliance with specified standards.
    - c. Notation of coordination requirements.
    - d. Notation of dimensions established by field measurement.
    - e. Relationship and attachment to adjoining construction clearly indicated.
    - f. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
  1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
  2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
    - a. Project name and submittal number.
    - b. Generic description of Sample.
    - c. Product name and name of manufacturer.
    - d. Sample source.
    - e. Number and title of applicable Specification Section.
    - f. Specification paragraph number and generic name of each item.
  3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns



available.

- a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- E. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
  2. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
  3. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

## 1.7 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
1. Architect and Construction Manager will not review submittals received from Contractor that do not have Contractor's review and approval.

## 1.8 ARCHITECT'S AND CONSTRUCTION MANAGER'S REVIEW

- A. Action Submittals: Architect and Construction Manager will review each submittal, indicate corrections or revisions required.
1. PDF Submittals: Architect and Construction Manager will indicate, via markup on each submittal, the appropriate action

## SUBMITTAL PROCEDURES

- a. Approved, Approved as noted, Resubmit based on Comments, Rejected-resubmit.
  
- B. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
  
- C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

PART 2 - PRODUCTS (Not Used)  
PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

## SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
  - 2. Section 011200 "Multiple Contract Summary" for responsibilities for temporary facilities and controls for projects utilizing multiple contracts.
  - 3. Section 012100 "Allowances" for allowance for metered use of temporary utilities.

#### 1.2 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities to be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.
- B. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.
- C. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.
- D. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Implementation and Termination Schedule: Within 10 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

## TEMPORARY FACILITIES AND CONTROLS

- C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- D. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

#### 1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

#### 1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

### PART 2 - PRODUCTS

### PART 3 - EXECUTION

#### 3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

#### 3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

#### 3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.

### TEMPORARY FACILITIES AND CONTROLS

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
    1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
  - C. Water Service:
    1. Install water service and distribution piping in sizes and pressures adequate for construction.
    2. Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
  - D. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
  - E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed..
  - F. Electric Power Service:
    1. Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
    2. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
      - a. Install electric power service overhead unless otherwise indicated.
      - b. Connect temporary service to Owner's existing power source, as directed by Owner.
- 3.4 SUPPORT FACILITIES INSTALLATION
- A. Comply with the following:
  - B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
    1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
    2. Maintain access for fire-fighting equipment and access to fire hydrants.
  - C. Storage and Staging: Use designated areas of Project site for storage and staging needs.

## TEMPORARY FACILITIES AND CONTROLS

- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
  - 2. Remove snow and ice as required to minimize accumulations.
- E. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
  - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
  - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
    - a. Provide temporary, directional signs for construction personnel and visitors.
  - 3. Maintain and touch up signs, so they are legible at all times.

### 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
  - 1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  - 1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Temporary Erosion and Sedimentation Control:
  - 1. Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
  - 2. Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, in accordance with General Notes.
    - a. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
    - b. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
    - c. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
    - d. Remove erosion and sedimentation controls, and restore and stabilize

### TEMPORARY FACILITIES AND CONTROLS

areas disturbed during removal.

- D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
  - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations
  - 2. Furnish locked gate to secure WBMLP-purchased products that may not be fully installed or are imminently being installed by GC/Electrician.

### 3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected site elements.

B. Related Requirements:

1. Section 015639 "Temporary Tree and Plant Protection" for temporary protection of existing trees and plants that are affected by selective demolition.
2. Section 017300 "Execution" for cutting and patching procedures.
3. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade improvements not part of selective demolition.

#### 1.2 DEFINITIONS

- A. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

- B. Topsoil for re-use after backfilling of trenches

#### 1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

#### 1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:

## SELECTIVE DEMOLITION



1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Maintain adjacent existing parking spaces to greatest extent possible; define areas requiring construction access by installation of construction barriers, cones and signage.
3. Coordination for shutoff, capping, and continuation of utility services.

#### 1.6 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
  1. Before selective demolition, Owner will remove the following items:
    - a. overhanging tree branches.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  1. Maintain fire-protection facilities in service during selective demolition operations.

#### PART 2 - PRODUCTS PART 3 - EXECUTION

##### 3.1 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  1. Owner will arrange to shut off indicated services/systems when requested by Contractor.

##### 3.2 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

#### SELECTIVE DEMOLITION

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

### 3.3 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

### 3.4 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.5 SELECTIVE DEMOLITION SCHEDULE

- A. Remove: Asphalt paving and curbs, excess soil during process of excavation.
- B. Remove and Salvage: soil for backfill, topsoil.
- C. Remove and Reinstall: Temporary removal of topsoil for reinstallation after install of underground services.

END OF SECTION 024119

SELECTIVE DEMOLITION

## SECTION 031000 - CONCRETE FORMING AND ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Form-facing material for cast-in-place concrete.
  - 2. Form liners.
  - 3. Shoring, bracing, and anchoring.

#### 1.2 DEFINITIONS

- A. Form-Facing Material: Temporary structure or mold for the support of concrete while the concrete is setting and gaining sufficient strength to be self-supporting.
- B. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review the following:
    - a. Special inspection and testing and inspecting agency procedures for field quality control.
    - b. Construction, movement, contraction, and isolation joints
    - c. Forms and form-removal limitations.
    - d. Shoring and reshoring procedures.
    - e. Anchor rod and anchorage device installation tolerances.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each of the following:
  - 1. Exposed surface form-facing material.
  - 2. Concealed surface form-facing material.
  - 3. Form liners.
  - 4. Form ties.
  - 5. Waterstops.
  - 6. Form-release agent.

## CONCRETE FORMING AND ACCESSORIES

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing and inspection agency.
- B. Research Reports: For insulating concrete forms indicating compliance with International Code Council Acceptance Criteria AC308.
- C. Field quality-control reports.

## 1.6 QUALITY ASSURANCE

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Form Liners: Store form liners under cover to protect from sunlight.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with **ACI 301**, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.
  - 1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
  - 2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.
    - a. For architectural concrete specified in Section 033300 "Architectural Concrete," limit deflection of form-facing material, studs, and walers to 0.0025 times their respective clear spans (L/400).
- B. Design, engineer, erect, shore, brace, and maintain insulating concrete forms in accordance with **ACI 301**, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.
  - 1. Design cross ties to transfer the effects of the following loads to the cast-in-place concrete core:
    - a. Wind Loads: As indicated on Drawings.
      - 1) Horizontal Deflection Limit: Not more than 1/360 of the wall height.

## CONCRETE FORMING AND ACCESSORIES

## 2.2 FORM-FACING MATERIALS

### A. As-Cast Surface Form-Facing Material:

1. Provide continuous, true, and smooth concrete surfaces.
2. Furnish in largest practicable sizes to minimize number of joints.
3. Acceptable Materials: As required to comply with Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete, and as follows:
  - a. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - 1) APA HDO (high-density overlay).
    - 2) APA MDO (medium-density overlay); mill-release agent treated and edge sealed.
    - 3) APA Structural 1 Plyform, B-B or better; mill oiled and edge sealed.
    - 4) APA Plyform Class I, B-B or better; mill oiled and edge sealed.

### B. Concealed Surface Form-Facing Material: Lumber, plywood, metal, plastic, or another approved material.

1. Provide lumber dressed on at least two edges and one side for tight fit.

### C. Form Liners:

1. Manufacturers: Subject to compliance with requirements *available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:*
  - a. General Contractor formed liners
  - b. Architectural Polymers, Inc.
  - c. Fitzgerald Formliners
  - d. Sika Corporation
  - e. Spec Formliners, Inc.
2. Size: Dimension to minimize vertical joints in curbs
3. Face Pattern: Smooth

## 2.3 RELATED MATERIALS

- A. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than **0.034 inch** thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.
- B. Chamfer Strips: Wood, metal, PVC, or rubber strips, **3/4 by 3/4 inch**, minimum.
- C. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

## CONCRETE FORMING AND ACCESSORIES

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
  2. Form release agent for form liners shall be acceptable to form liner manufacturer.
- D. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
1. Furnish units that leave no corrodible metal closer than **1 inch** to the plane of exposed concrete surface.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF FORMWORK

- A. Comply with **ACI 301**.
- B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of **ACI 117** and to comply with the Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete" for as-cast finishes [and] [Section 033300 "Architectural Concrete"].
- C. Limit concrete surface irregularities as follows:
1. Surface Finish-3.0: ACI 117 Class A, **1/8 inch**.
- D. Construct forms tight enough to prevent loss of concrete mortar.
1. Minimize joints.
  2. Exposed Concrete: Symmetrically align joints in forms.
- E. Construct removable forms for easy removal without hammering or prying against concrete surfaces.
1. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
  2. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  3. Install keyways, reglets, recesses, and other accessories, for easy removal.
- F. Do not use rust-stained, steel, form-facing material.
- G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces.
1. Provide and secure units to support screed strips
  2. Use strike-off templates or compacting-type screeds.
- H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible.

## CONCRETE FORMING AND ACCESSORIES

1. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar.
  2. Locate temporary openings in forms at inconspicuous locations.
- I. Chamfer exterior corners and edges of permanently exposed concrete.
- J. At construction joints, overlap forms onto previously placed concrete not less than **12 inches**.
- K. Form openings, chases, offsets, sinkages, keyways, blocking, screeds, and bulkheads required in the Work.
1. Determine sizes and locations from trades providing such items.
  2. Obtain written approval of Architect prior to forming openings not indicated on Drawings.
- L. Construction and Movement Joints:
1. Construct joints true to line with faces perpendicular to surface plane of concrete.
  2. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  3. Place joints perpendicular to main reinforcement.
  4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.
    - a. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
  5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
  6. Space vertical joints in walls 8 ft. o.c.
    - a. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
- M. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- N. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- O. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 INSTALLATION OF EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete.
1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

## CONCRETE FORMING AND ACCESSORIES

2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
3. Install dovetail anchor slots in concrete structures, as indicated on Drawings.
4. Clean embedded items immediately prior to concrete placement.

### 3.3 REMOVING AND REUSING FORMS

- A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than **50 deg F** for 48 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.
  1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved[ **at least 70 percent of**] its 28-day design compressive strength.
  2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work.
  1. Split, frayed, delaminated, or otherwise damaged form-facing material are unacceptable for exposed surfaces.
  2. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints.
  1. Align and secure joints to avoid offsets.
  2. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

### 3.4 SHORING AND RESHORING INSTALLATION

- A. Comply with **ACI 318** and **ACI 301** for design, installation, and removal of shoring and reshoring.
  1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

### 3.5 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare test reports.

## CONCRETE FORMING AND ACCESSORIES



B. Inspections:

1. Inspect formwork for shape, location, and dimensions of the concrete member being formed.

END OF SECTION 031000

## SECTION 032000 - CONCRETE REINFORCING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Steel reinforcement bars.
2. Welded-wire reinforcement.

B. Related Requirements:

1. Section 033816 "Unbonded Post-Tensioned Concrete" for reinforcing related to post-tensioned concrete.
2. Section 034100 "Precast Structural Concrete" for reinforcing used in precast structural concrete.
3. Section 034500 "Precast Architectural Concrete" for reinforcing used in precast architectural concrete.
4. Section 321313 "Concrete Paving" for reinforcing related to concrete pavement and walks.
5. Section 321316 "Decorative Concrete Paving" for reinforcing related to decorative concrete pavement and walks.

#### 1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:
  - a. Special inspection and testing and inspecting agency procedures for field quality control.
  - b. Construction contraction and isolation joints.
  - c. Steel-reinforcement installation.

#### 1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Each type of steel reinforcement.
2. Epoxy repair coating.
3. Zinc repair material.
4. Bar supports.
5. Mechanical splice couplers.
6. Structural thermal break insulated connection system.

## CONCRETE REINFORCING

B. Sustainable Design Submittals:

1. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.
2. Environmental Product Declaration (EPD): For each product.
3. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project, means of transportation, and cost for each regional material.
4. Environmental Product Declaration: For each product.
5. Environmental Product Declaration: For each product.
6. Third-Party Certifications: For each product.
7. Third-Party Certified Life Cycle Assessment: For each product.
8. Type III Environmental Product Declaration (EPD): For each product.
9. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
10. Manufacturer Inventory: For each product, provide manufacturer's manifest of ingredients.

C. Shop Drawings: Comply with ACI SP-066:

1. Include placing drawings that detail fabrication, bending, and placement.
2. Include bar sizes, lengths, materials, grades, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports for concrete reinforcement.
3. For structural thermal break insulated connection system, indicate general configuration, insulation dimensions, tension bars, compression pads, shear bars, and dimensions.

D. Construction Joint Layout: Indicate proposed construction joints required to build the structure.

1. Location of construction joints is subject to approval of Architect.

E. Delegated Design Submittal: For structural thermal break insulated connection system, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Delegated Design Engineer Qualifications: Include the following:

1. Experience providing delegated design engineering services of the type indicated.
2. Documentation that delegated design engineer is licensed in the state in which Project is located.

B. Welding certificates.

#### CONCRETE REINFORCING

1. Reinforcement To Be Welded: Welding procedure specification in accordance with AWS D1.4/D1.4M.
- C. Material Certificates: For each of the following, signed by manufacturers:
  1. Epoxy-Coated Reinforcement: CRSI's "Epoxy Coating Plant Certification."
  2. Dual-Coated Reinforcement: CRSI's "Epoxy Coating Plant Certification."
- D. Material Test Reports: For the following, from a qualified testing agency:
  1. Steel Reinforcement:
    - a. For reinforcement to be welded, mill test analysis for chemical composition and carbon equivalent of the steel in accordance with ASTM A706/A706M.
  2. Mechanical splice couplers.
- E. Field quality-control reports.
- F. Minutes of preinstallation conference.

## 1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.4/D 1.4M.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage and to avoid damaging coatings on steel reinforcement.
  1. Store reinforcement to avoid contact with earth.
  2. Do not allow epoxy-coated reinforcement to be stored outdoors for more than 60 days without being stored under an opaque covering.
  3. Do not allow dual-coated reinforcement to be stored outdoors for more than 60 days without being stored under an opaque covering.
  4. Do not allow stainless steel reinforcement to come into contact with uncoated reinforcement.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design structural thermal break insulated connection system, including attachment to building construction.

## CONCRETE REINFORCING

- B. Seismic Performance of Structural Thermal Break Insulated Connection System: Structural thermal break Insulated connection system to withstand the effects of earthquake motions determined according to ASCE/SEI 7.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A615/A615M, **Grade 60**, deformed.
- B. Low-Alloy Steel Reinforcing Bars: ASTM A706/A706M, deformed.
- C. Headed-Steel Reinforcing Bars: ASTM A970/A970M.
- D. **Epoxy-Coated Reinforcing Bars:**
  - 1. Steel Bars: ASTM A615/A615M, **Grade 60**, deformed bars.
- E. Galvanized-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, plain, fabricated from galvanized-steel wire into flat sheets.

## 2.3 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protection of In-Place Conditions:
  - 1. Do not cut or puncture vapor retarder.
  - 2. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

### 3.2 INSTALLATION OF STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for placing and supporting reinforcement.
- B. Accurately position, support, and secure reinforcement against displacement.
  - 1. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
  - 2. Do not tack weld crossing reinforcing bars.

## CONCRETE REINFORCING

- C. Preserve clearance between bars of not less than **1 inch**, not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.
- D. Provide concrete coverage in accordance with **ACI 318**.
- E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- F. Splices: Lap splices as indicated on Drawings.
  - 1. Bars indicated to be continuous, and all vertical bars to be lapped not less than 36 bar diameters at splices, or **24 inches**, whichever is greater.
  - 2. Stagger splices in accordance with **ACI 318**.
  - 3. Mechanical Splice Couplers: Install in accordance with manufacturer's instructions.
  - 4. Weld reinforcing bars in accordance with AWS D1.4/D 1.4M, where indicated on Drawings.
- G. Install structural thermal break insulated connection system in accordance with manufacturer's instructions.
- H. Install welded-wire reinforcement in longest practicable lengths.
  - 1. Support welded-wire reinforcement in accordance with CRSI "Manual of Standard Practice."
    - a. For reinforcement less than W4.0 or D4.0, continuous support spacing to not exceed **12 inches**.
  - 2. Lap edges and ends of adjoining sheets at least one wire spacing plus **2 inches** for plain wire and **8 inches** for deformed wire.
  - 3. Offset laps of adjoining sheet widths to prevent continuous laps in either direction.
  - 4. Lace overlaps with wire.
- I. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating in accordance with ASTM D3963/D3963M.
- J. Dual-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating in accordance with ASTM D3963/D3963M.
- K. Zinc-Coated Reinforcement: Repair cut and damaged zinc coatings with zinc repair material in accordance with ASTM A780/A780M.

### 3.3 JOINTS

- A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Place joints perpendicular to main reinforcement.
  - 2. Continue reinforcement across construction joints unless otherwise indicated.

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3. Do not continue reinforcement through sides of strip placements of floors and slabs.

B. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length, to prevent concrete bonding to one side of joint.

### 3.4 INSTALLATION TOLERANCES

A. Comply with **ACI 117**.

### 3.5 FIELD QUALITY CONTROL

A. Inspections:

1. Steel-reinforcement placement.
2. Steel-reinforcement mechanical splice couplers.
3. Steel-reinforcement welding.

B. Manufacturer's Inspections: Engage manufacturer of structural thermal break insulated connection system to inspect completed installations prior to placement of concrete, and to provide written report that installation complies with manufacturer's written instructions.

END OF SECTION 032000

## SECTION 033000 - CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories" for form-facing materials, form liners.
2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.
3. Section 033300 "Architectural Concrete" for general building applications of specially finished formed concrete.
4. Section 312000 "Earth Moving" for drainage fill under slabs-on-ground.

#### 1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

- B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

- a. Special inspection and testing and inspecting agency procedures for field quality control.
- b. Construction joints, control joints, isolation joints, and joint-filler strips.
- c. Semirigid joint fillers.
- d. Vapor-retarder installation.
- e. Anchor rod and anchorage device installation tolerances.
- f. Cold and hot weather concreting procedures.
- g. Concrete finishes and finishing.
- h. Curing procedures.
- i. Forms and form-removal limitations.
- j. Shoring and reshoring procedures.



- k. Methods for achieving specified floor and slab flatness and levelness.
- l. Floor and slab flatness and levelness measurements.
- m. Concrete repair procedures.
- n. Concrete protection.
- o. Initial curing and field curing of field test cylinders (ASTM C31/C31M.)
- p. Protection of field cured field test cylinders.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each of the following.

- 1. Portland cement.
- 2. Fly ash.
- 3. Slag cement.
- 4. Blended hydraulic cement.
- 5. Silica fume.
- 6. Performance-based hydraulic cement
- 7. Aggregates.
- 8. Admixtures:
  - a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
- 9. Color pigments.
- 10. Fiber reinforcement.
- 11. Vapor retarders.
- 12. Floor and slab treatments.
- 13. Liquid floor treatments.
- 14. Curing materials.
  - a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.
- 15. Joint fillers.
- 16. Repair materials.

B. Sustainable Design Submittals:

- 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

C. Design Mixtures: For each concrete mixture, include the following:

- 1. Mixture identification.
- 2. Minimum 28-day compressive strength.
- 3. Durability exposure class.
- 4. Maximum w/cm.

#### CAST-IN-PLACE CONCRETE

5. Slump limit.
6. Air content.
7. Nominal maximum aggregate size.
8. Steel-fiber reinforcement content.

D. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
  - a. Location of construction joints is subject to approval of the Architect.

E. Samples: For vapor retarder.

F. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Exposure Class designation.
3. Formed Surface Finish designation and final finish.
4. Curing process.

## 1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

B. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Fiber reinforcement.
4. Curing compounds.
5. Floor and slab treatments.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.
9. Semirigid joint filler.
10. Joint-filler strips.
11. Repair materials.

C. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.

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5. Silica fume.
6. Performance-based hydraulic cement.
7. Aggregates.
8. Admixtures:
  - a. Permeability-Reducing Admixture: Include independent test reports, indicating compliance with specified requirements, including dosage rate used in test.

D. Research Reports:

1. For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
2. For sheet vapor retarder/termite barrier, showing compliance with ICC AC380.

E. Preconstruction Test Reports: For each mix design.

F. Field quality-control reports.

## 1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as an ACI-certified Flatwork Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an ACI Concrete Flatwork Technician .

1. Post-Installed Concrete Anchors Installers: ACI-certified Adhesive Anchor Installer.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.

1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor to be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

D. Field Quality-Control Testing Agency Qualifications: An independent agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests to be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

## CAST-IN-PLACE CONCRETE

## 1.7 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.
  - 1. Include the following information in each test report:
    - a. Admixture dosage rates.
    - b. Slump.
    - c. Air content.
    - d. Seven-day compressive strength.
    - e. 28-day compressive strength.
    - f. Permeability.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ASTM C94/C94M and **ACI 301**.

## 1.9 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with **ACI 301** and ACI 306.1 and as follows.
  - 1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 2. When average high and low temperature is expected to fall below **40 deg F** for three successive days, maintain delivered concrete mixture temperature within the temperature range required by **ACI 301**.
  - 3. Do not use frozen materials or materials containing ice or snow.
  - 4. Do not place concrete in contact with surfaces less than **35 deg F**, other than reinforcing steel.
  - 5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with **ACI 301** and **ACI 305.1**, and as follows:
  - 1. Maintain concrete temperature at time of discharge to not exceed **95 deg F**.
  - 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

## 1.10 WARRANTY

## PART 2 - PRODUCTS

### 2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with **ACI 301** unless modified by requirements in the Contract Documents.

### 2.2 CONCRETE MATERIALS

- A. Regional Materials: Concrete shall be manufactured within **500 miles** of Project site from aggregates and cementitious materials that have been extracted, harvested, or recovered, as well as manufactured, within **500 miles** of Project site.
- B. Source Limitations:
  - 1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
  - 2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
  - 3. Obtain aggregate from single source.
  - 4. Obtain each type of admixture from single source from single manufacturer.
- C. Cementitious Materials:
  - 1. Portland Cement: ASTM C150/C150M, Type II, gray.
  - 2. Fly Ash: ASTM C618, Class C or F.
  - 3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.
  - 4. Silica Fume: ASTM C1240 amorphous silica.
  - 5. Performance-Based Hydraulic Cement: ASTM C1157/C1157M: Type GU, general use.
- D. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.
  - 1. Maximum Coarse-Aggregate Size: **3/4 inch** nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- E. Water and Water Used to Make Ice: ASTM C94/C94M, potable or, complying with ASTM C1602/C1602M, including all limits listed in Table 2 and the requirements of paragraph 5.4

### 2.3 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from **1/8 inch** and that can be feathered at edges to match

## CAST-IN-PLACE CONCRETE

adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
  2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, **1/8 to 1/4 inch** or coarse sand, as recommended by underlayment manufacturer.
  4. Compressive Strength: Not less than 4500 psi at 28 days when tested in accordance with ASTM C109/C109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from **1/4 inch** and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
  2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, **1/8 to 1/4 inch** or coarse sand as recommended by topping manufacturer.
  4. Compressive Strength: Not less than 4500 psi at 28 days when tested in accordance with ASTM C109/C109M.

## 2.4 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with **ACI 301**.
1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Slag Cement: 50 percent by mass.
  2. Silica Fume: 10 percent by mass.
  3. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
  4. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
- C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.
1. Use high-range water-reducing admixture in concrete, as required, for placement and workability.
  2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

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3. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

## 2.5 CONCRETE MIXTURES

- A. Class A: Normal-weight concrete used for footings, grade beams, and tie beams.
  1. Exposure Class: **ACI 318** F1.
  2. Minimum Compressive Strength: **4500 psi** at 28 days.
  3. Slump Limit: **4 inches**, plus or minus **1 inch**.
  4. Air Content:
    - a. Exposure Class F1: 4.5 percent, plus or minus 1.5 percent at point of delivery for concrete containing **3/4-inch** nominal maximum aggregate size.
  5. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

## 2.6 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M and ASTM C1116/C1116M, and furnish batch ticket information.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.
  1. For mixer capacity of **1 cu. yd.** or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
  2. For mixer capacity larger than **1 cu. yd.**, increase mixing time by 15 seconds for each additional **1 cu. yd.**.
  3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verification of Conditions:
  1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
  2. Do not proceed until unsatisfactory conditions have been corrected.

## CAST-IN-PLACE CONCRETE

### 3.2 PREPARATION

- A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:
  - 1. Daily access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
  - 4. Security and protection for test samples and for testing and inspection equipment at Project site.

### 3.3 INSTALLATION OF EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
  - 1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.4 INSTALLATION OF VAPOR RETARDER

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.
  - 1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
  - 2. Face laps away from exposed direction of concrete pour.
  - 3. Lap vapor retarder over footings and grade beams not less than **6 inches**, sealing vapor retarder to concrete.
  - 4. Lap joints **6 inches** and seal with manufacturer's recommended tape.
  - 5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
  - 6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
  - 7. Protect vapor retarder during placement of reinforcement and concrete.
    - a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by **6 inches** on all sides, and sealing to vapor retarder.

### 3.5 JOINTS

- A. Construct joints true to line, with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

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1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
  2. Place joints perpendicular to main reinforcement.
    - a. Continue reinforcement across construction joints unless otherwise indicated.
    - b. Do not continue reinforcement through sides of strip placements of floors and slabs.
  3. Form keyed joints as indicated. Embed keys at least **1-1/2 inches** into concrete.
  4. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
  5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:
1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut **1/8-inch-** wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.
- D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
  2. Terminate full-width joint-filler strips not less than **1/2 inch** or more than **1 inch** below finished concrete surface, where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
  3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- E. Doweled Joints:
1. Install dowel bars and support assemblies at joints where indicated on Drawings.
  2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.
- 3.6 CONCRETE PLACEMENT
- A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.

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2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.
- B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.
- C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.
- D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of **ACI 301**, but not to exceed the amount indicated on the concrete delivery ticket.
- E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
1. If a section cannot be placed continuously, provide construction joints as indicated.
  2. Deposit concrete to avoid segregation.
  3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
  4. Consolidate placed concrete with mechanical vibrating equipment in accordance with **ACI 301**.
    - a. Do not use vibrators to transport concrete inside forms.
    - b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least **6 inches** into preceding layer.
    - c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    - d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Do not place concrete floors and slabs in a checkerboard sequence.
  2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  3. Maintain reinforcement in position on chairs during concrete placement.
  4. Screed slab surfaces with a straightedge and strike off to correct elevations.
  5. Level concrete, cut high areas, and fill low areas.
  6. Slope surfaces uniformly to drains where required.
  7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
  8. Do not further disturb slab surfaces before starting finishing operations.

### 3.7 FINISHING FLOORS AND SLABS

- A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish:
1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
  2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with **ACI 117** tolerances for conventional concrete.
  3. Apply float finish to surfaces to receive trowel finish.
- C. Trowel Finish:
1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
  2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
  3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
  4. Do not add water to concrete surface.
  5. Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.
  6. Apply a trowel finish to surfaces exposed to view.
  7. Finish surfaces to the following tolerances, in accordance with **ASTM E1155**, for a randomly trafficked floor surface:
    - a. Slabs on Ground:
      - 1) Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, **10-ft.-** long straightedge resting on two high spots and placed anywhere on the surface does not exceed **3/16 inch**.
    - b. Suspended Slabs:

- D. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated on Drawings. While concrete is still plastic, slightly scarify surface with a fine broom perpendicular to main traffic route.
1. Coordinate required final finish with Architect before application.
  2. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

- E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and locations indicated on Drawings.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming

- with fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Architect before application.

### 3.8 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

- A. Filling In:
1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
  2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
  3. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

### 3.9 CONCRETE CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
1. Comply with **ACI 301** and ACI 306.1 for cold weather protection during curing.
  2. Comply with **ACI 301** and **ACI 305.1** for hot-weather protection during curing.
  3. Maintain moisture loss no more than **0.2 lb/sq. ft. x h** before and during finishing operations.
- B. Curing Formed Surfaces: Comply with **ACI 308.1** as follows:
1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
  2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
  3. If forms remain during curing period, moist cure after loosening forms.
  4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:
    - a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
    - b. Continuous Sprinkling: Maintain concrete surface continuously wet.
    - c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
    - d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
    - e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.

- 1) Recoat areas subject to heavy rainfall within three hours after initial application.
- 2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with **ACI 308.1** as follows:

1. Begin curing immediately after finishing concrete.

### 3.10 TOLERANCES

A. Conform to **ACI 117**.

### 3.11 JOINT FILLING

- A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least **2 inches** deep in formed joints.
- D. Overfill joint, and trim joint filler flush with top of joint after hardening.

### 3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete:
  1. Repair and patch defective areas when approved by Architect.
  2. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a **No. 16** sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than **1/2 inch** in any dimension to solid concrete.
    - a. Limit cut depth to **3/4 inch**.
    - b. Make edges of cuts perpendicular to concrete surface.
    - c. Clean, dampen with water, and brush-coat holes and voids with bonding

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- agent.
        - d. Fill and compact with patching mortar before bonding agent has dried.
        - e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  - 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.
    - a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
    - b. Compact mortar in place and strike off slightly higher than surrounding surface.
  - 3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces:
- 1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.
    - a. Correct low and high areas.
    - b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
  - 2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of **0.01 inch** wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  - 3. After concrete has cured at least 14 days, correct high areas by grinding.
  - 4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.
    - a. Finish repaired areas to blend into adjacent concrete.
  - 5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.
    - a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
    - b. Feather edges to match adjacent floor elevations.
  - 6. Correct other low areas scheduled to remain exposed with repair topping.
    - a. Cut out low areas to ensure a minimum repair topping depth of **1/4 inch** to match adjacent floor elevations.
    - b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes **1 inch** or less in diameter, by cutting out and replacing with fresh concrete.
  - a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a **3/4-inch** clearance all around.
  - b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
  - c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
  - d. Place, compact, and finish to blend with adjacent finished concrete.
  - e. Cure in same manner as adjacent concrete.
8. Repair random cracks and single holes **1 inch** or less in diameter with patching mortar.
  - a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
  - b. Dampen cleaned concrete surfaces and apply bonding agent.
  - c. Place patching mortar before bonding agent has dried.
  - d. Compact patching mortar and finish to match adjacent concrete.
  - e. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

### 3.13 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.
- B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
  1. Testing agency to be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
  2. Testing agency to immediately report to Architect, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
  3. Testing agency to report results of tests and inspections, in writing, to Owner, Architect, Contractor, and concrete manufacturer within 48 hours of inspections and tests.
    - a. Test reports to include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:
      - 1) Project name.

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- 2) Name of testing agency.
  - 3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
  - 4) Name of concrete manufacturer.
  - 5) Date and time of inspection, sampling, and field testing.
  - 6) Date and time of concrete placement.
  - 7) Location in Work of concrete represented by samples.
  - 8) Date and time sample was obtained.
  - 9) Truck and batch ticket numbers.
  - 10) Design compressive strength at 28 days.
  - 11) Concrete mixture designation, proportions, and materials.
  - 12) Field test results.
  - 13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
  - 14) Type of fracture and compressive break strengths at seven days and 28 days.
- C. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.
- D. Inspections:
1. Headed bolts and studs.
  2. Verification of use of required design mixture.
  3. Concrete placement, including conveying and depositing.
  4. Curing procedures and maintenance of curing temperature.
  5. Verification of concrete strength before removal of shores and forms from beams and slabs.
  6. Batch Plant Inspections: On a random basis, as determined by Architect.
- E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M to be performed in accordance with the following requirements:
1. Slump: ASTM C143/C143M:
    - a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    - b. Perform additional tests when concrete consistency appears to change.
  2. Slump Flow: ASTM C1611/C1611M:
    - a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    - b. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete;



ASTM C173/C173M volumetric method, for structural lightweight concrete.

- a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M:
    - a. One test hourly when air temperature is **40 deg F** and below or **80 deg F** and above, and one test for each composite sample.
  5. Unit Weight: ASTM C567/C567M fresh unit weight of structural lightweight concrete.
    - a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  6. Compression Test Specimens: ASTM C31/C31M:
    - a. Cast and laboratory cure two sets of two **6-inch** by **12-inch** or **4-inch** by **8-inch** cylinder specimens for each composite sample.
  7. Compressive-Strength Tests: ASTM C39/C39M.
    - a. Test one set of two laboratory-cured specimens at seven days and one set of two specimens at 28 days.
    - b. A compressive-strength test to be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
  8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor to evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
  9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than **500 psi** if specified compressive strength is **5000 psi**, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than **5000 psi**.
  10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
  11. Additional Tests:
    - a. Testing and inspecting agency to make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
    - b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.

- 1) Acceptance criteria for concrete strength to be in accordance with **ACI 301**, Section 1.6.6.3.
  12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- F. Measure floor and slab flatness and levelness in accordance with **ASTM E1155** within 24 hours of completion of floor finishing and promptly report test results to Architect.

### 3.14 PROTECTION

- A. Protect concrete surfaces as follows:
1. Protect from petroleum stains.
  2. Diaper hydraulic equipment used over concrete surfaces.
  3. Prohibit vehicles from interior concrete slabs.
  4. Prohibit use of pipe-cutting machinery over concrete surfaces.
  5. Prohibit placement of steel items on concrete surfaces.
  6. Prohibit use of acids or acidic detergents over concrete surfaces.

END OF SECTION 033000