

**THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE**

**DIVISION OF CAPITAL ASSET MANAGEMENT  
OFFICE OF CONSTRUCTION SERVICES**

**SPECIFICATIONS FOR**

**FIRE ALARM & DETECTION SYSTEMS UPGRADE  
SOLDIERS' HOME HOLYOKE**

**DATE: 15 MARCH 2011**

**Designer  
Architects  
STEFFIAN BRADLEY ARCHITECTS**

**BVH INTEGRATED SERVICES  
HVAC/Electrical/Plumbing Engineers**

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**INVITATION TO BID**

Sealed proposals for the Fire Alarm & Detection System Upgrade at the Soldier's Home in Holyoke will be received by the Architect, Steffian Bradley Architects. General Bids will be received until **11 April 2011** until **4pm** at which time they will be publicly opened and read aloud. Sealed proposals for the filed sub-bids shall be submitted by **5 April 2011** at **4pm** at which time they will be publically opened and read aloud. Late postmarks will not be accepted.

Estimated cost of project: **\$225,000**

All bid proposals should be directed to Steffian Bradley Architects, One Corporate Road – Suite 102, Enfield, CT 06082 in a sealed envelope bearing the Project Title, Bid Title, Date and time of Bid Opening and the Bidders Name and Address clearly indentified.

Every bid shall be accompanied by a proposal guarantee in the form of lawful money, a Bid Bond, or a certified check on, or a treasurer's or cashier's check issued by a responsible bank or trust company having offices in the Commonwealth of Massachusetts. The proposal guarantee shall be in the amount of five percent (5%) of the amount of the bid. Checks and bid bonds shall be payable to the Soldier's Home in Holyoke.

Drawings, specifications and proposal forms may be secured at New England Blue Print Paper Co., Inc, 302 Locust Street, Springfield, MA 01108 on **23 March 2011** after **12pm**. Bidders must pay for the construction documents at time of pick up. Otherwise, bidders may request a PDF version of the documents at no cost, by sending name, email and contact information to [kwaltz@steffian.com](mailto:kwaltz@steffian.com). If any changes are made to this Invitation to Bid, an addendum will be issued. Addenda will be distributed through New England Blue Print Paper Co (as noted above), and electronically to those requesting PDF versions.

Questions concerning this Invitation to Bid must be submitted in writing and sent electronically to Kirsten Waltz @ [kwaltz@steffian.com](mailto:kwaltz@steffian.com) no later than **1 April 2011** at **4pm**. Responses will be emailed to all bidders as well as sent to New England Blue Print for pick up.

A Pre-Bid Site Inspection Conference and tour will be conducted on **30 March 2011** at **1pm** at the Soldier's Home in Holyoke, 110 Cherry Street, Holyoke, MA 01040 for the benefit of the interested contractors. Interested parties must sign in and meet at the North Building main lobby.

A Performance and Payment Bond in the full amount of the Contract will be required of the successful bidder. Attorney-in-fact who signs Bid Bonds or Payment Bonds and Performance Bonds must file with each Bond a certified and effective dated copy of their power of attorney. Minimum wage rates have been established for this project by the Commonwealth of Massachusetts.

All bidders shall comply with the Supplemental Equal Employment Opportunity, Anti-Discrimination Action Program. No proposal may be withdrawn within 30 days, Saturdays, Sundays and legal holidays excluded, after the actual date of the opening of bids.

The Awarding Authority reserves the right to waive any informality in or to reject any or all proposal or to accept any proposal which in their opinion is in their best interest of the Soldier's Home, Holyoke, MA whether or not such a proposal is the lowest bid.

Donald Sargent  
Director of Construction  
The Soldier's Home in Holyoke

## SUMMARY OF DOCUMENTS REQUIRED WITH BID

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The contractor shall furnish the following items and/or documents with the sealed bid to avoid having bid rejected for non-compliance. Other documents or certifications may be required to fulfill particular circumstances noted in the project manual and shall be included if required.

All forms and bids shall be on the forms as provided in the bidding package.

A. For General Bidders

1. General Bid Form
2. Form of Bid Bond
3. Non-Collusive Affidavit
4. DCAM Certificate of Eligibility (not included in bid documents)
5. Prime/General Contractor DCAM Update Statement
6. Debarment Disclosure Form
7. Contractors Certification Form

15 March 2011 – Bid Set

## INSTRUCTIONS TO BIDDERS

### 1. PREPARATION OF GENERAL BIDS

- A. Bidding procedures shall be in accordance with the provisions of Massachusetts General Laws, Chapter 149, Section 44A through Section 44I, inclusive and Chapter 30, Section 39M as amended. Said statutes are hereby made a part of these INSTRUCTIONS TO BIDDERS to the same extent as though herein reproduced in full. In the event of any inconsistency between any of the provisions of these Contract Documents and of cited statute, anything herein to the contrary notwithstanding, the provisions of said statute shall govern.

### 2. ADDENDA AND INTERPRETATIONS

- A. No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretations shall be in writing and addressed to Kirsten Waltz AIA, LEED AP, Principal, Steffian Bradley Architects, One Corporate Road, Suite 102, Enfield CT 06082-6036 by either email or fax: EMAIL [kwaltz@steffian.com](mailto:kwaltz@steffian.com), FAX 860-627-1930, and to be given consideration, must be received in the Architect's office not later than 4:00PM, Friday, April 1, 2011. Any and all such interpretations and any supplemental instructions pertaining to Bidders, will be in the form of written Addenda to the Contract Documents which, if issued, will be sent to New England Blue Print and sent electronically no later than 72 hours prior to time set for opening of bids.
- B. Failure of any bidder to receive any such Addenda shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents. At the same time of the opening of the bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all Addenda). The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to his bid.

### 3. FORM AND AMOUNT OF BID DEPOSITS

- A. Every general bid shall be accompanied by a bid bond, or cash, or certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the Soldier's Home in Holyoke, in the amount of five (5%) of the total bid amount.
- B. The return of such bid deposits will be in accordance with GL Chapter 149, Section 44B. Special attention is called to the provisions of GL Chapter 149, Secs. 44E and 44F that every general bid which is not accompanied by the prescribed bid deposit shall be rejected.

### 4. REQUIREMENTS FOR FOREIGN CORPORATIONS

- A. The attention of all bidders is called to the provisions of General Laws, Chapter 30, Section 39L, added by Chapter 446 of the Acts of 1963 which provided that the Awarding Authority may not enter into a Contract for construction work and may not approve as a Subcontractor furnishing labor and materials for a part of any work a foreign corporation which has not complied with the requirements of Section 3 and 5 of Chapter 181 of the General Laws. The term "foreign corporation" means a corporation not incorporated under the laws of the Commonwealth of Massachusetts.

### 5. SUBMISSION OF BIDS

- A. Each General Bid shall be submitted on the FORM FOR GENERAL BID furnished by the Awarding Authority. All blank spaces shall be filled in, in ink or typewritten, in words and figures only where no space is provided for words, and signed by the General Bidders. The FORM FOR GENERAL BID, including Bid Deposit, shall be enclosed in a sealed envelope with the following plainly marked on the outside:  
**GENERAL BID FOR: SOLDIER'S HOME IN HOLYOKE, FIRE ALARM & DETECTION SYSTEM UPGRADE**  
If the bid is mailed, the General Bidder shall enclose his sealed bid in an outer envelope and address it as follows:

**Soldiers' Home Holyoke  
Fire Alarm & Detection System Upgrade**

15 March 2011 – Bid Set

FROM: General Bidder's Name and Business Address  
SOLDIER'S HOME IN HOLYOKE, FIRE ALARM & DETECTION SYSTEM UPGRADE

TO: Kirsten Waltz  
Steffian Bradley Architects  
One Corporate Road, Suite 102  
Enfield, CT 06082

- B. All bidders are cautioned to allow ample time for transmittal of bids. Bids received after the specified times will not be accepted or recognized. Note that the times of receipt will determine the acceptability of mailed bids regardless of postmark.
- C. The Awarding Authority will not be held responsible for premature opening of bid envelopes which are not properly filled out in accordance with the instructions set forth herein.

**7. BID MODIFICATIONS**

- A. No modification of any bid will be considered by the Awarding Authority, unless same is in writing, sealed, and received by the Awarding Authority prior to the times respectively established herein for the receipt of General Bids.

**8. WITHDRAWAL OF BIDS**

- A. A bid may be withdrawn by written or telegraphic request subsequently confirmed in writing, provided that such request is received prior to times respectively established herein for the receipt of General Bids. The Awarding Authority will not be responsible, however, for the timely receipt of any request for withdrawal in ample time for delivery before the bid opening hour.

**9. BIDDER'S QUALIFICATIONS**

- A. Each General Bidder must be on an approved list of prequalified bidders, in accordance with the provisions of Massachusetts General Laws, Chapter 579, before consideration for such bid is given.

**10. RIGHT TO REJECT BIDS RECEIVED**

- A. The Awarding Authority reserves the right to reject any or all general bids if it be in the public interest so to do. All bids will remain subject to acceptance for thirty days after the day of the Bid opening, but the Owner may, in its sole discretion, release any Bid and return Bid security before that date.

**11. INSPECTION OF EXISTING BUILDING**

- A. All bidders are to inspect the existing building and to familiarize themselves with conditions as they exist, prior to submitting their bids. **The building is currently in operation and is not accessible to bidders outside of the pre-bid walk through.** In order to facilitate existing conditions inspections, the Soldier's Home is holding a Pre-Bid Site Inspection Conference – **30 March 2011 at 1pm.**

**12. METHOD OF AWARD**

- A. The Contract will be awarded to the lowest responsible and eligible general bidder on the basis of the proposed Contract Price. Special attention is called to the provisions of GL Chapter 149, Sec. 44A defining the term "lowest responsible and eligible bidder".

**13. EXECUTION OF GENERAL CONTRACT AND SECURITY FOR FAITHFUL PERFORMANCE**

- A. Special attention is directed to the requirements of the G.L. Chapter 30, Section 39M and the FORM FOR GENERAL BID that the general bidder who is selected as General Contractor promptly confer with the Awarding Authority within five (5) days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof, in accordance with the general bid; and furnish with the executed Contract, a Labor and Material Payment Bond, in the sum of 100 percent (100%) of the Contract Price, the premiums for which are to be paid by the General Contractor and are included in the Contract Price. If the General Contractor is a

15 March 2011 – Bid Set

partnership, the bond shall be signed in the correct corporate name by duly authorized officer, agent, or attorney-in-fact. The executed bond shall be accompanied by (a) appropriate acknowledgment of the respective parties; (b) appropriate certified copy of power-of-attorney or other certifications of authority where bond is executed by an agent, officer or representative of the General Contractor or Surety; (c) a duly certified extract from the by-laws or resolutions of the Surety under which power-of-attorney or other certificate of authority of its agent, officer, or representative was issued; and (d) a duly certified copy of the latest published financial statement of assets and liabilities of the Surety. Certificates of insurance, required under the Contract Documents, shall be submitted with bonds.

**14. SALES TAX EXEMPTION**

- A. All materials and items which will be incorporated into the project, and which will become the property of the Owner upon completion of said project, will be exempt from the Massachusetts Sales Tax. The General Contractor shall obtain from the Owner the Sales Tax exemption number, applicable for the project, and shall include said number when ordering materials for the project.

**15. BUILDING PERMIT**

- A. The obtaining and the cost of Holyoke building permits and all other permits required for the work of this Contract is the responsibility of the successful bidder.

**END OF INSTRUCTIONS TO BIDDERS**

15 March 2011 – Bid Set

General Contract Opening 4:00PM, April 11, 2011  
Filed Sub-Bids Opening 12:00PM, April 5, 2011

**FORM FOR GENERAL BIDS**

A. The undersigned proposes to furnish all labor and materials required for the project:

---

(Please type or print the business name of the bidding firm)

The Contract includes work to upgrade the existing fire alarm and detection system, at the Soldiers' Home, 110 Cherry Street, Holyoke, Ma 01040, as per the accompanying drawings and specifications prepared by Steffian Bradley Architects, One Corporate Road, Suite 102, Enfield, CT 06082, for the contract price below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbered \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

C. The proposed contract price is: (in words) \_\_\_\_\_

\_\_\_\_\_ dollars,

(in figures) (\$\_\_\_\_\_).

For Alternate No. 1                      Add \$\_\_\_\_\_

For Alternate No. 2                      Add \$\_\_\_\_\_

D. The subdivision of the proposed contract price is as follows:

**Item D. 1:** The work of the General Contractor \_\_\_\_\_  
\_\_\_\_\_ dollars (\$\_\_\_\_\_)

**Item D. 2:** The work of the sub-contractors: \_\_\_\_\_

Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade

15 March 2011 – Bid Set

BY: \_\_\_\_\_  
Please type or print Name and Title

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

E. The undersigned agrees that, if selected as General Contractor, he or she will, within five days, (Saturdays, Sundays and legal holidays excluded) after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of the bid and furnish a Labor and Materials (or Payment) Bond, from a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority and the Bond in the sum of 50 percent of the Contract price, the premiums for which are to be paid by the General Contractor and are included in the Contract price.

The undersigned further certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection, the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section 29-F of M.G.L. Chapter 29, or any other applicable debarment provisions of any other General Laws or any rule or regulations promulgated hereunder.

Date: \_\_\_\_\_  
(Please print or type Name of General Bidder )

by: \_\_\_\_\_  
(Please print or type Name and Title of person signing Bid)

\_\_\_\_\_  
( Business Address)

\_\_\_\_\_  
(Please include City, State, Zip Code, Business Telephone & facsimile numbers)

Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade

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SIGN HERE: \_\_\_\_\_

Please certify by writing your initials in the space provided below that:

all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

Please initial: \_\_\_\_\_

- If a Corporation, signature and seal by duly authorized officer is required.
- If a partnership, so state and names and residential addresses of all partners are required.
- If an individual, so state and also indicate residential address if different than business address and also sign.

15 March 2011 – Bid Set

Filed Sub-Bids Opening 12:00PM, April 5, 2011  
(General Contract Opening 4:00PM, April 11, 2011)

**FORM FOR SUB-BIDS**

TO: All General Bidders or As Indicated or Except Those Excluded in section C. below:

A. The undersigned proposes to furnish all labor and materials required for the project:

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(Please type or print the business name of the bidding firm)

The Contract includes work to upgrade the existing fire alarm and detection system, at the Soldiers' Home, 110 Cherry Street, Holyoke, Ma 01040, as per the accompanying drawings and specifications prepared by Steffian Bradley Architects, One Corporate Road, Suite 102, Enfield, CT 06082, for the contract price below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbered \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ .

C. The proposed contract price is: (in words) \_\_\_\_\_

\_\_\_\_\_ dollars,

(in figures) (\$\_\_\_\_\_).

For Alternate No. 1                      Add \$\_\_\_\_\_

For Alternate No. 2                      Add \$\_\_\_\_\_

D. This sub-bid:

(        ) May **not** be used by the following general bidder(s):

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**Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade**

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(        ) May **only** be used by the following general bidders:

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To exclude general bidders, insert "X" in one box only and fill in blank following that box.  
Do not answer D if no general bidders are excluded.

E. The undersigned agrees that if he is selected a sub-bidder, they will, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the General Bidder selected as the General Contractor, execute with such general bidders a subcontract in accordance with the terms of the sub-bid, and contingent upon the execution of General Contract and, if requested so to do in the general bid by such general bidder who shall pay the premiums therefore, furnish Performance and Labor and Materials Payment Bonds of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority, in the full sum of the subcontract price.

F. The names of all persons, firms, and corporations furnishing to the undersigned labor or labor and materials for the class of classes or part thereof of work for which the provisions of the Section of the Specifications for this sub-trade require a listing in this paragraph, including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the Specifications, the name of each such class of work or part thereto and the bid price for such class of work or part thereof are:

NAME	CLASS OF WORK	BID PRICE
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

(Do not give bid price for any class or part thereof furnished by the undersigned.)

G. The undersigned agrees that the above list of bids to the undersigned represents bona fide bids based on the hereinbefore described Drawings, Specifications, and Addenda and that, if the undersigned is awarded the Contract, they will be used for the work indicated at the amounts stated, if satisfactory to the Awarding Authority.

**Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade**

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H. The undersigned further agrees to be bound to the General Contractor by terms of the hereinbefore described Drawings, Specifications, including all General Conditions stated therein, and Addenda, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Owner.

The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the Drawings and Specifications:

1. Have been in business under present business name \_\_\_\_\_ years.
2. Ever failed to complete any work awarded? \_\_\_\_\_
3. List one or more recent buildings with names of General Contractor and Architect on which you served as Subcontractor for work of similar character as required by the above named building:

BUILDING	ARCHITECT	GEN'L CONTRACTOR	CONTRACT AM'T
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____

4. Bank Reference \_\_\_\_\_

I. The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work that he/she will comply fully with all laws and regulations applicable to awards of Subcontractors subject to Section forty-four F.

The undersigned further certifies under penalties of perjury that this sub-bid is all respects bona fide, fair, and made without collusion or fraud with any other person. As used in this subsection, the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

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

\_\_\_\_\_  
(please type or print the Business Name of the Sub-Bidder)

By: \_\_\_\_\_  
(please type or print the Name and title of the Person Signing the Bid)

SIGN HERE: \_\_\_\_\_  
(Signature)

**Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade**

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Please certify by writing your initials in the space provided below that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

Please initial: \_\_\_\_\_

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(please type or print Business address including City, State, and Zip Code)

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(if mail address is different, please enter below)

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(Business Telephones- please include fax number & e-mail)

Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade

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**BID BOND** (GENERAL BIDDER)

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

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*(Insert full name and address of Contractor)*

as PRINCIPAL, and

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*(name of Principal)*

as SURETY

are held and firmly bound unto the Soldiers' Home in Holyoke, as obligee in the penal sum of (5 %) of the attached bid, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly be these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal has submitted the attached bid, dated \_\_\_\_\_, 20\_\_\_\_, for \_\_\_\_\_

---

*(Insert full name, address and description of project)*

NOW, THEREFORE, if the Principal shall not withdraw said bid within 30 days, Saturdays, Sundays, and legal holidays excluded, after said opening and shall within the period specified therefore enter into a written contract with the Soldiers' Home in Holyoke in accordance with bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract; or in the event of withdrawal of said bid within period specified, or the failure to enter into such contract and give such bond within the time specified, if the Principal, shall pay the Authority the difference between the amount specified in said bid and the amount for work which The Soldiers' Home in Holyoke may procure the required work up to the amount of this bond, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS THEREOF, the above-bound parties have executed this instrument, under their several seals this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ the name and corporate seal of each corporate party being hereto affixed and these Presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade

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Attest:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

Affix Corporate Seal

Attest:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

Affix Corporate Seal

(Power of Attorney for person signing for Surety company must be attached to bond)

**CERTIFICATE AS TO CORPORATE PRINCIPAL**

I, \_\_\_\_\_, certify that I am the \_\_\_\_\_ Secretary of the corporation named as Principal in the within bond; that \_\_\_\_\_, who signed the said bond on behalf of the Principal was then \_\_\_\_\_ of said corporation; that I know his/her signature, and his/her signature thereto is genuine; and that said bond was duly signed, sealed, and attested to for and in behalf of said corporation by authority of its governing body.

\_\_\_\_\_

(Corporate Seal)

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NON COLLUSIVE AFFIDAVIT

State of \_\_\_\_\_)

ss.

County of \_\_\_\_\_)

\_\_\_\_\_, being first duly sworn deposes and says:

That he is \_\_\_\_\_ (a partner or officer of the of the firm of, etc.) \_\_\_\_\_ the party making the foregoing proposal or bid, that such proposal or bid is genuine and not collusive or sham; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any Bidder or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any other Bidder, or to fix any overhead, profit or cost element of said price, or of that of any other Bidder, or to secure any advantage against \_\_\_\_\_ or any person interested in the proposed contract; and that all statements in said proposal or bid are true.

\_\_\_\_\_  
Name of Bidder if the bidder is an individual  
Name of Bidder if the bidder is a partnership  
Name of Bidder if the bidder is a corporation

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_

(Notary Public)

My commission expires \_\_\_\_\_, 20\_\_\_\_\_.

**SPECIAL NOTICE TO AWARDING AUTHORITY**  
**BIDDERS' UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND**  
**ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)**

EFFECTIVE MARCH 30, 2010

**Commonwealth of Massachusetts**  
**Division of Capital Asset Management**  
**PRIME/GENERAL CONTRACTOR**  
**UPDATE STATEMENT**

**TO ALL BIDDERS AND AWARDING AUTHORITIES**

A COMPLETED AND SIGNED PRIME/GENERAL CONTRACTOR UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY PRIME/GENERAL BID FOR A CONTRACT PURSUANT TO M.G.L. c.149, §44A AND M.G.L. c. 149A. ANY PRIME/GENERAL BID SUBMITTED WITHOUT AN APPROPRIATE UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

**Caution: This form is to be used for submitting Prime/General Contract bids. It is not to be used for submitting Filed Sub-Bids or Trade Sub-Bids.**

**AWARDING AUTHORITIES**

If the Awarding Authority determines that the bidder does not demonstrably possess the skill, ability, and integrity necessary to perform the work on the project, it must reject the bid.

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**BIDDER'S AFFIDAVIT**

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Prime/General Contractor Update Statement on behalf of the bidder named below, that I have read this Prime/General Contractor Update Statement, and that all of the information provided by the bidder in this Prime/General Contractor Update Statement is true, accurate, and complete as of the bid date.

\_\_\_\_\_  
Bid Date

\_\_\_\_\_  
Print Name of Prime/General Contractor

\_\_\_\_\_  
Project Number (or  
name if no number)

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

\_\_\_\_\_  
Awarding Authority

\_\_\_\_\_  
Telephone Number

**SIGNATURE⇒**

\_\_\_\_\_  
**Bidder's Authorized Representative**

# INSTRUCTIONS

## INSTRUCTIONS TO BIDDERS

- This form must be completed and submitted by all Prime/General contractors bidding on projects pursuant to M.G.L. c. 149, §44A and M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. **MAKING A MATERIALLY FALSE STATEMENT IN THIS UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.**
- **This Update Statement must include all requested information that was not previously reported on the Application used for your firm's most recently issued (not extended or amended) Prime/General Contractor Certificate of Eligibility. The Update Statement must cover the entire period since the date of your Application, NOT since the date of your Certification.**
- You must use this official form of Update Statement. Copies of this form may be obtained from the awarding authority and from the Asset Management Web Site: [www.mass.gov/dcam](http://www.mass.gov/dcam).
- If additional space is needed, please copy the appropriate page of this Update Statement and attach it as an additional sheet.
- See the section entitled "Bidding Limits" in the *Instructions to Awarding Authorities* for important information concerning your bidding limits.

## INSTRUCTIONS TO AWARDING AUTHORITIES

### ***Determination of Bidder Qualifications***

- It is the awarding authority's responsibility to determine who is the lowest eligible and responsible bidder. You must consider all of the information in the low bidder's Update Statement in making this determination. **Remember:** this information was not available to the Division of Capital Asset Management at the time of certification.
- The bidder's performance on the projects listed in Parts 1 and 2 must be part of your review. Contact the project references.
- **AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDER'S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT. Telephone (617) 727-9320 for an appointment.**

### ***Bidding Limits***

**Single Project Limit:** The total amount of the bid, including all alternates, may not exceed the bidder's Single Project Limit.

**Aggregate Work Limit:** The annual value of the work to be performed on the contract for which the bid is submitted,

when added to the annual cost to complete the bidder's other currently held contracts, may not exceed the bidder's Aggregate Work Limit. Use the following procedure to determine whether the low bidder is within its Aggregate Work Limit:

**Step 1** Review Update Statement Question #2 to make sure that all requested information is provided and that the bidder has accurately calculated and totaled the annualized value of all incomplete work on its currently held contracts (column 9).

**Step 2** Determine the annual dollar value of the work to be performed on your project. This is done as follows:

- (i) If the project is to be completed in less than 12 months, the annual dollar value of the work is equal to the full amount of the bid.
- (ii) If the project will take more than 12 months to complete, calculate the number of years given to complete the project by dividing the total number of months in the project schedule by 12 (calculate to 3 decimal places), then divide the amount of the bid by the calculated number of years to find the annual dollar value of the work.

**Step 3** Add the annualized value of all of the bidder's incomplete contract work (the total of column 9 on page 5) to the annual dollar value of the work to be performed on your project. **The total may not exceed the bidder's Aggregate Work Limit.**

### ***Correction of Errors and Omissions in Update Statements***

**Matters of Form:** An awarding authority shall not reject a contractor's bid because there are mistakes or omissions of form in the Update Statement submitted with the bid, provided the contractor promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.05(1)].

**Correction of Other Defects:** An awarding authority may, in its discretion, give a contractor notice of defects, other than mistakes or omissions of form, in the contractor's Update Statement, and an opportunity to correct such defects, provided the correction of such defects is not prejudicial to fair competition. An awarding authority may reject a corrected Update Statement if it contains unfavorable information about the contractor that was omitted from the Update Statement filed with the contractor's bid. [810 CMR 8.05(2)].

**PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE *BUILDING* PROJECTS YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) DCAM CERTIFICATE OF ELIGIBILITY. YOU MUST REPORT ALL REQUESTED INFORMATION NOT PREVIOUSLY REPORTED ON THAT DCAM APPLICATION\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 2 - CURRENTLY HELD CONTRACTS**

LIST ALL PUBLIC AND PRIVATE BUILDING AND NON-BUILDING *CONSTRUCTION* PROJECTS YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7	8	9
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)	NO. OF YEARS REMAINING (see note below)	ANNUALIZED VALUE OF INCOMPLETE WORK (col. 7 ÷ col. 8) (divided by)

ANNUALIZED VALUE OF ALL INCOMPLETE CONTRACT WORK (Total of Column 9)

\$ \_\_\_\_\_

Column 8

- If less than one year is left in the project schedule, write 1.
- If more than 12 months are left in the project schedule, divide the number of months left in the project schedule by 12 (calculate to three decimal places).

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

### PART 3 - PROJECT PERFORMANCE

**For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information you provide herein must supplement the Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].**

	YES	NO
1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project?	<input type="checkbox"/>	<input type="checkbox"/>
2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?	<input type="checkbox"/>	<input type="checkbox"/>
3. Has your firm failed or refused to complete any punch list work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy?	<input type="checkbox"/>	<input type="checkbox"/>
5. Has your surety taken over or been asked to complete any of your work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked?	<input type="checkbox"/>	<input type="checkbox"/>
7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?	<input type="checkbox"/>	<input type="checkbox"/>
8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have there been any deaths of an employee or others occurring in connection with any of your projects?	<input type="checkbox"/>	<input type="checkbox"/>
11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws**

**Please answer the following questions. Information must supplement all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) since your firm’s Application for your most recently issued (not extended or amended) Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility.**

The term “administrative proceeding” as used in this Prime/General Contractor Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

**If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.).**

	YES	NO
1. Have any civil, judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others?	<input type="checkbox"/>	<input type="checkbox"/>
2. Have any criminal proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property?	<input type="checkbox"/>	<input type="checkbox"/>
3. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals?	<input type="checkbox"/>	<input type="checkbox"/>
4. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws (continued)**

	YES	NO
5. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker's compensation?	<input type="checkbox"/>	<input type="checkbox"/>
6. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment?	<input type="checkbox"/>	<input type="checkbox"/>
7. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations?	<input type="checkbox"/>	<input type="checkbox"/>
8. Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your firm or any principal or officer or anyone with a financial interest in your firm from public contracting?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of state or federal law regulating the environment?	<input type="checkbox"/>	<input type="checkbox"/>
10. Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA's Web Site at <a href="http://www.osha.gov">www.osha.gov</a>	<input type="checkbox"/>	<input type="checkbox"/>
11. Has your firm been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects?	<input type="checkbox"/>	<input type="checkbox"/>
12. Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract?	<input type="checkbox"/>	<input type="checkbox"/>
13. Are there any other issues that you are aware which may affect your firm's responsibility and integrity as a building contractor?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 5 - SUPERVISORY PERSONNEL**

List all supervisory personnel, such as project managers and superintendents, who will be assigned to the project if your firm is awarded the contract. **Attach the resume of each person listed below.**

NAME	TITLE OR FUNCTION

**PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION**

Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued?  Yes  No  
**If YES, attach a separate page providing complete details.**

**PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT.**

**Attach here a copy of the list of completed construction projects which was submitted with your firm’s DCAM Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. The Attachment must include a complete copy of the entire Section G – “Completed Projects” and the final page – “Certification” (Section J) containing the signature and date that the Completed Projects list (Section G) was submitted to the Division of Capital Asset Management.**

\*

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**SPECIAL NOTICE TO AWARDING AUTHORITY**  
**SUB-BIDDERS' UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND**  
**ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)**

EFFECTIVE MARCH 30, 2010

**Commonwealth of Massachusetts**  
**Division of Capital Asset Management**



**SUB-BIDDER**  
**UPDATE STATEMENT**  
**TO ALL SUB-BIDDERS, TRADE CONTRACTORS AND AWARDING**  
**AUTHORITIES**

A COMPLETED AND SIGNED SUB-BIDDER UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY FILED SUB-BID PURSUANT TO M.G.L. c.149, §44F AND EVERY TRADE SUB-BID PURSUANT TO M.G.L. c. 149A. ANY FILED SUB-BID OR TRADE SUB-BID SUBMITTED WITHOUT AN APPROPRIATE SUB-BIDDER UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

***Caution: This form is to be used for submitting Filed Sub-Bids and Trade Sub-Bids. It is not to be used for submitting Prime/General Contract bids.***

**AWARDING AUTHORITIES**

If the Awarding Authority determines that the sub-bidder is not competent to perform the work as specified on the project, it should reject the bid.

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**SUB-BIDDER'S AFFIDAVIT**

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Sub-bidder Update Statement on behalf of the bidder named below, that I have read this Sub-bidder Update Statement, and that all of the information provided by the bidder in this Sub-bidder Update Statement is true, accurate, and complete as of the bid date.

\_\_\_\_\_  
Bid Date

\_\_\_\_\_  
Print Name of Sub-bidder or Trade Contractor

\_\_\_\_\_  
Project Number (or  
name if no number)

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

\_\_\_\_\_  
Awarding Authority

\_\_\_\_\_  
Telephone Number

**SIGNATURE⇒**

\_\_\_\_\_  
**Bidder's Authorized Representative**

# INSTRUCTIONS

## INSTRUCTIONS TO SUB-BIDDERS

- This form must be completed and submitted by all Filed Sub-Bidders bidding on projects pursuant to M.G.L. c. 149, §44F and Trade Contractors bidding on projects pursuant to M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. **MAKING A MATERIALLY FALSE STATEMENT IN THIS SUB-BIDDER UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.**
- **This Sub-Bidder Update Statement must include all requested information that was not previously reported on the Application used for your firm's most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. The Sub-Bidder Update Statement must cover the entire period since the date of that Application, NOT since the date of your Certification.**
- You must use this official form of Sub-bidder Update Statement. Copies of this form may be obtained from the awarding authority and from the DCAM Web Site: [www.mass.gov/dcam](http://www.mass.gov/dcam) .
- If additional space is needed, please copy the appropriate page of this Sub-bidder Update Statement and attach it as an additional sheet.

## INSTRUCTIONS TO AWARDING AUTHORITIES

### *Determination of Sub-Bidder Qualifications*

- It is the awarding authority's responsibility to determine each responsible bidder. You must consider all of the information in the bidder's Sub-bidder Update Statement in making this determination. Remember: this information was not available to the Division of Capital Asset Management at the time of certification.
- The sub-bidder's performance on the projects listed in Parts 1 and 2 must be part of your review. Contact the project references.
- **AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE SUB-BIDDER'S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT.** Telephone (617) 727-9320 for an appointment.

### *Correction of Errors and Omissions in Sub-bidder Update Statements*

Matters of Form: An awarding authority shall not reject a sub-bidder's bid because there are mistakes or omissions of form in the Sub-bidder Update Statement submitted with the bid pursuant to M.G.L. c.149, §44D, provided the sub-bidder promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.13(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a sub-bidder notice of minor defects and omissions as to form in the Sub-bidder's Update Statement and provide an opportunity to correct its Sub-bidder Update Statement. However, the sub-bidder shall not be allowed to make corrections to a Sub-bidder Update Statement if material information about the sub-bidder was omitted from the Sub-bidder Update Statement filed with the sub-bidder's bid. The Awarding Authority shall advise DCAM of any material omissions in a Sub-bidder's Update Statement.. [810 CMR 8.13(2)].

**PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) SUB-BIDDER CERTIFICATE OF ELIGIBILITY\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Sub-bidder Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 2 - CURRENTLY HELD CONTRACTS**

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain. \_\_\_\_\_

### PART 3 - PROJECT PERFORMANCE

**For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information you provide herein must supplement the Application for your most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. You must report all requested information not previously reported on that Application. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].**

	YES	NO
1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project?	<input type="checkbox"/>	<input type="checkbox"/>
2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?	<input type="checkbox"/>	<input type="checkbox"/>
3. Has your firm failed or refused to complete any punch list work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy?	<input type="checkbox"/>	<input type="checkbox"/>
5. Has your surety taken over or been asked to complete any of your work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked?	<input type="checkbox"/>	<input type="checkbox"/>
7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?	<input type="checkbox"/>	<input type="checkbox"/>
8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have there been any deaths of an employee or others occurring in connection with any of your projects?	<input type="checkbox"/>	<input type="checkbox"/>
11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws**

**Please answer the following questions. Information must supplement all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) since your firm’s Application for your most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application.**

The term “administrative proceeding” as used in this Sub-Bidder Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

**If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.).**

	YES	NO
1. Have any civil, judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others?	<input type="checkbox"/>	<input type="checkbox"/>
2. Have any criminal proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property?	<input type="checkbox"/>	<input type="checkbox"/>
3. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals?	<input type="checkbox"/>	<input type="checkbox"/>
4. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 4 - Legal or Administrative Proceedings; Compliance with Laws (continued)**

	YES	NO
5. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker's compensation?	<input type="checkbox"/>	<input type="checkbox"/>
6. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment?	<input type="checkbox"/>	<input type="checkbox"/>
7. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations?	<input type="checkbox"/>	<input type="checkbox"/>
8. Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your firm or any principal or officer or anyone with a financial interest in your firm from public contracting?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of state or federal law regulating the environment?	<input type="checkbox"/>	<input type="checkbox"/>
10. Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA's Web Site at <a href="http://www.osha.gov">www.osha.gov</a>	<input type="checkbox"/>	<input type="checkbox"/>
11. Has your firm been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects?	<input type="checkbox"/>	<input type="checkbox"/>
12. Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract?	<input type="checkbox"/>	<input type="checkbox"/>
13. Are there any other issues that you are aware which may affect your firm's responsibility and integrity as a building contractor?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 5 - SUPERVISORY PERSONNEL**

List all supervisory personnel who will be assigned to the project if your firm is awarded the contract.  
**Attach the resume of each person listed below.**

NAME	TITLE OR FUNCTION

**PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION**

Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued?  Yes  No  
**If YES, attach a separate page providing complete details.**

**PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT ALONG WITH CERTIFICATION PAGE.**

Attach here a copy of the list of completed construction projects which was submitted with your firm’s Application for your most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. The Attachment must include a complete copy of the entire Section F – “Completed Projects” (Section G – “Completed Projects” for firms certified based upon their Prime/General Application), and the final page – “Certification Page”, (Section I in the Sub-bidder Application or Section J in Prime/General Application) containing the signature and date that the Completed Projects list (Section F or G) was submitted to the Division of Capital Asset Management.

Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade

15 March 2011 – Bid Set

**DEBARMENT DISCLOSURE FORM**

PUBLIC CONTRACTS - DEBARMENT  
CHAPTER 550, ACTS OF 1991

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

Date \_\_\_\_\_

Name of Bidder \_\_\_\_\_

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Print Name & Title of Person Signing

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State, ZIP

THIS FORM MUST BE SIGNED & RETURNED WITH YOUR BID OFFER.

15 March 2011 – Bid Set

**CONTRACTOR'S CERTIFICATION**

A contractor shall not be eligible for award of a contract unless at the time of the bid opening such contractor has submitted the following certification, which is deemed a part of the resulting contract:

**CONTRACTOR'S CERTIFICATION**

\_\_\_\_\_ Certifies that:  
(Contractor)

1. Intends to use the following listed construction trades in the work under this contract

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. will comply with the minority manpower ratio and specific affirmative action steps contained herein; and
3. will obtain from each of its subcontractors and submit the contracting or agency prior to the award of any sub-contract under this contract the subcontractor certification required by these bid conditions.

"The bidder hereby certifies that he shall comply with the minority manpower ratio and specific action steps contained in the appendix EEO attached hereto, including compliance with the minority contractor compliance specified in Section V of said appendix. The contractor receiving the award contract shall be required to obtain from each of its subcontractors and submit to the contracting or administering agency prior to the performance of any work under said contract a certification by said contractor, regardless of tier, that it will comply with the minority manpower ration and specific affirmative action steps contained in the appendix EEO"

\_\_\_\_\_  
(Signature of authorized representative of Contractor)

In order to ensure that the said subcontractor's certification becomes a part of all subcontractors under the prime contract, no subcontract shall be executed until an authorized representative of the Owner agency (or agencies) administering this project has determined, in writing, that the said certification has been incorporated in such subcontract regardless of tier. Any subcontract executed without such written approval shall be void.

**Document ID:**

**Contractor's DCAM Certification Number:**

**Contractor's Vendor Code Number:**



**COMMONWEALTH OF MASSACHUSETTS  
STANDARD VERTICAL CONSTRUCTION CONTRACT  
For Projects Over \$100,000 Subject to M.G.L. c149, §44A -F**

**OWNER - CONTRACTOR AGREEMENT**

Awarding Authority: Soldiers Home in Holyoke

Department Code: HLY

This agreement ("Contract") is made as of the \_\_\_\_ day of \_\_\_\_, 20\_\_, by and between the Commonwealth of Massachusetts acting by and through the Awarding Authority identified above with a principal place of business at \_\_\_\_, and \_\_\_\_\_, a \_\_\_\_ 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 \_\_\_\_\_ Mass. State Project No. \_\_\_\_\_, Contract No. \_\_\_\_\_, in accordance with and as described in the Plans and Specifications dated \_\_\_\_\_, 20\_\_, prepared by \_\_\_\_\_ ("Designer"), as

modified by Addenda Nos. \_\_\_\_\_ dated \_\_\_\_\_ 20\_\_\_\_\_.

**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 (\$\_\_\_\_\_). 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):

**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
- The General Conditions of the Contract
  - The Supplementary General Conditions [Note: the term “Supplementary General Conditions” may also refer to Division 1 of the Specifications.]
- 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:

MBE: \_\_\_\_\_% of the Contract Price. WBE: \_\_\_\_\_% of the Contract Price.

The applicable minority workforce utilization percentage, if any, is \_\_\_\_\_.

The applicable women workforce utilization percentage, if any, is \_\_\_\_\_.

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

\$ \_\_\_\_\_ 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: \_\_\_\_\_

Additional Signature Required where DCAM is the Awarding Authority:

Approved as to Form:

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

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

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

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

(Note: For Awarding Authorities other than DCAM—if additional signatures are required, insert page 4a for these signatures.)

**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.”)*

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

**Forms Used During Contract Award and Execution**

- Payment Bond
- Performance Bond
- Schedule for Participation by Minority and Women Business Enterprises
- Letter of Intent
- Certificate of Corporate Vote
- Certificate of Joint Venture
- Certificate of Compliance with State Tax Law
- Workforce Certification-Certificate of Compliance with Certain Workforce Related Legal Requirements
- DCAM Trench Application & Permit & Excavator Permit Supplement

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THE COMMONWEALTH OF MASSACHUSETTS

SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION  
AND AFFIRMATIVE ACTION PROGRAM

ATTACHMENT

I. Definitions

For purposes of this contract,

"Minority" means a person who meets one or more of the following definitions:

- (a) American Indian or Native American means: all persons having origins in any of the original peoples of North America and who are recognized as an Indian by a tribe or tribal organization.
- (b) Asian means: All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian sub-continent, or the Pacific Islands, including, but not limited to China, Japan, Korea, Samoa, India, and the Philippine Islands.
- (c) Black means: All persons having origins in any of the Black racial groups of Africa, including, but not limited to, African-Americans, and all persons having origins in any of the original peoples of the Cape Verdean Islands.
- (d) Eskimo or Aleut means: All persons having origins in any of the peoples of Northern Canada, Greenland, Alaska, and Eastern Siberia.
- (e) Hispanic means: All persons having their origins in any of the Spanish-speaking peoples of Mexico, Puerto Rico, Cuba, Central or South America, or the Caribbean Islands.

"State construction contract" means a contract for the construction, reconstruction, installation, demolition, maintenance or repair of a building or capital facility, or a contract for the construction, reconstruction, alteration, remodeling or repair of a public work undertaken by a department, agency, board, or commission of the commonwealth.

"State assisted construction contract" means a contract for the construction, reconstruction, installation, demolition, maintenance or repair of a building or capital facility undertaken by a political subdivision of the commonwealth, or two or more political subdivisions thereof, an authority, or other instrumentality and whose costs of the contract are paid for, reimbursed, grant funded, or otherwise supported, in whole or in part, by the commonwealth.

II. Equal Opportunity, Non-Discrimination and Affirmative Action

During the performance of this Contract, the Contractor and all subcontractors (hereinafter collectively referred to as "the Contractor") for a state construction contract or a state assisted construction contract, for him/herself, his/her assignees and successors in interest, agree to comply with all applicable equal employment opportunity, non-discrimination and affirmative action requirements, including but not limited to the following:

**Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade**

15 March 2011 – Bid Set

In connection with the performance of work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability, shall not discriminate in the selection or retention of subcontractors, and shall not discriminate in the procurement of materials and rentals of equipment.

The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion, or transfer; recruitment advertising, layoff or termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship or on-the-job training opportunity. The Contractor shall comply with the provisions of chapter 151B of the Massachusetts General Laws, as amended, and all other applicable anti-discrimination and equal opportunity laws, all of which are herein incorporated by reference and made a part of this Contract.

The Contractor shall post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Soldiers' Home in Holyoke setting forth the provisions of the Fair Employment Practices Law of the Commonwealth (Massachusetts General Laws Chapter 151B).

In connection with the performance of work under this contract, the Contractor shall undertake, in good faith, affirmative action measures to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability. Such affirmative action measures shall entail positive and aggressive measures to ensure non-discrimination and to promote equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, apprenticeship and on-the-job training programs. A list of positive and aggressive measures shall include, but not be limited to, advertising employment opportunities in minority and other community news media; notifying minority, women and other community-based organizations of employment opportunities; validating all job specifications, selection requirements, and tests; maintaining a file of names and addresses of each worker referred to the Contractor and what action was taken concerning such worker; and notifying the administering agency in writing when a union with whom the Contractor has a collective bargaining agreement has failed to refer a minority or woman worker. These and other affirmative action measures shall include all actions required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, sex, sexual orientation, genetic information, military service, age, ancestry or disability. One purpose of this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for this and future Commonwealth public construction projects.

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### III. Minority and Women Workforce Participation

Pursuant to his/her obligations under the preceding section, the Contractor shall strive to achieve on this project the labor participation goals contained herein. Said participation goals shall apply in each job category on this project including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers and those classes of work enumerated in Section 44F of Chapter 149 of the Massachusetts General Laws. The participation goals for this project shall be 15.3% for minorities and 6.9% for women. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program. Additionally, the participation goals contained herein should not be seen or treated as a floor or as a ceiling for the employment of particular individuals or group of individuals.

### IV. Liaison Committee

At the discretion of the agency that administers the contract for the construction project there may be established for the life of the contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one representative each from the agency or agencies administering the contract for the construction project, hereinafter called the administering agency, a representative from the Office of Affirmative action, and such other representatives as may be designated by the administering agency.

The Contractor (or his/her agent, if any, designated by him/her as the on-site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

### V. Reports and Records

The Contractor shall prepare projected workforce tables on a quarterly basis when required by the administering agency. These shall be broken down into projections by week, of workers required in each trade. Copies shall be furnished one week in advance of the commencement of the period covered, and also, when updated, to the administering agency and the Liaison Committee when required.

The Contractor shall prepare weekly reports in a form approved by the administering agency, unless information required is required to be reported electronically by the administering agency, the number of hours worked in each trade by each employee, identified as woman, minority or non-minority. Copies of these shall be provided at the end of each such week to the administering agency and the Liaison Committee.

Records of employment referral orders, prepared by the contractor, shall be made available to the administering agency on request.

The Contractor will provide all information and reports required by the administering agency on instructions issued by the administering agency and will permit access to its facilities and any books,

EQUAL EMPLOYMENT OPPORTUNITY/ANTI-DISCRIMINATION/AFFIRMATIVE ACTION

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records, accounts and other sources of information which may be determined by the administering agency to effect the employment of personnel. This provision shall apply only to information pertinent to the Commonwealth's supplementary non-discrimination, equal opportunity and access and opportunity contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the administering agency and shall set forth what efforts he has made to obtain the information.

#### VI. Access to Work Site

A designee of the administering agency and a designee of the Liaison Committee shall each have a right to access the work site.

#### VII. Solicitations for Subcontracts, and for the Procurement of Materials and Equipment

In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this contract relative to non-discrimination and equal opportunity.

#### X. Bidders Certification Requirement

The bidder certification included in this specification shall be completed by each bidder and submitted with each bid.

#### XI. Contractor's Certification

A bidder for a state construction contract or state assisted construction contract will not be eligible for award of the contract unless such bidder has submitted to the administering agency the included certification, which will be incorporated into the resulting contract.

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PAYMENT BOND

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

---

*(Insert full name and address of Contractor)*

as PRINCIPAL, and

---

*(name of Principal)*

,as SURETY

are held and firmly bound unto the Soldiers' Home in Holyoke, as obligee in the penal sum of (100%) of the attached bid, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly be these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal has submitted the attached bid, dated \_\_\_\_\_, 20\_\_\_\_, for \_\_\_\_\_.

*(Insert full name, address and description of project)*

NOW, THEREFORE, if the Principal shall not withdraw said bid within 30 days, Saturdays, Sundays, and legal holidays excluded, after said opening and shall within the period specified therefore enter into a written contract with the Soldiers' Home in Holyoke in accordance with bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract; or in the event of withdrawal of said bid within period specified, or the failure to enter into such contract and give such bond within the time specified, if the Principal, shall pay the Authority the difference between the amount specified in said bid and the amount for work which The Soldiers' Home in Holyoke may procure the required work up to the amount of this bond, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS THEREOF, the above-bound parties have executed this instrument, under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ the name and corporate seal of each corporate party being hereto affixed and these Presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Soldiers' Home Holyoke  
Fire Alarm & Detection System Upgrade

15 March 2011 – Bid Set

Attest:

\_\_\_\_\_

\_\_\_\_\_

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

Affix Corporate Seal

Attest:

\_\_\_\_\_

\_\_\_\_\_

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

Affix Corporate Seal

(Power of Attorney for person signing for surety company must be attached to bond.)

**CERTIFICATE AS TO CORPORATE PRINCIPAL**

I, \_\_\_\_\_, certify that I am the \_\_\_\_\_ Secretary of the corporation named as Principal in the within bond; that \_\_\_\_\_, who signed the said bond on behalf of the Principal was then \_\_\_\_\_ of said corporation; that I know his/her signature, and his/her signature thereto is genuine; and that said bond was duly signed, sealed, and attested to for and in behalf of said corporation by authority of its governing body.

\_\_\_\_\_

(Corporate Seal)

15 March 2011 – Bid Set

**SOLDIERS' HOME IN HOLYOKE**  
**FORM OF PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_,  
an individual, a partnership, a corporation organized under the laws of the  
\_\_\_\_\_ of \_\_\_\_\_ having  
a usual place of business \_\_\_\_\_  
as Principal, and \_\_\_\_\_  
a corporation organized under the laws of the \_\_\_\_\_  
of \_\_\_\_\_ which company is authorized to transact the business of  
suretyship in het Commonwealth of Massachusetts and has a usual place of business in  
Massachusetts, as Surety, are holden and stand firmly bound and obligated unto the Soldiers'  
Home in Holyoke, as Oblige, in the sum of \_\_\_\_\_  
dollars (\$) \_\_\_\_\_), lawful money of the United States of America, for payment of  
which, well and truly made, we hereby, jointly and severally, bind ourselves and each of us our  
heirs, executors, administrators, successors and assignees by these present.

WHEREAS, the said Principal has by means of a written proposal, accepted by the Soldiers' Home  
In Holyoke on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, entered into a contract  
with the said oblige, a copy of which agreement is attached hereto and by reference made a part  
hereof;

NOW, THEREFORE, THE CONDITION of this obligation is such that if the said Principal shall well  
and truly keep and perform all the agreements, terms and conditions of said contract on its part to  
be kept and performed or furnished, this obligation shall be void; otherwise, it shall remain in full  
force and effect.

And the said Surety for value received, hereby stipulates and agrees that no extension of time, or  
change in, alteration of, or addition to the terms of the contract or the specifications accompanying  
the same shall in any way affect its obligations on this bond, and it does hereby waive notice of nay  
such extension of time, alteration of, or addition to the terms of the contract or to the specifications.

Soldiers' Home Holyoke  
Fire Alarm & Detection Systems Upgrade

15 March 2011 – Bid Set

IN WITNESS WHEREOF, we have hereunto set our hands and seals to this bond this \_\_\_\_\_

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

WITNESS:

\_\_\_\_\_ (SEAL)  
\_\_\_\_\_

WITNESS

\_\_\_\_\_ (SEAL)  
Name of Surety  
\_\_\_\_\_

Power of Attorney for person signing for the Surety Company must be attached.

15 March 2011 – Bid Set

CERTIFICATE AS TO CORPORATE PRINCIPAL  
(PERFORMANCE BOND)

I, \_\_\_\_\_, certify that I am the  
\_\_\_\_\_ Of the corporation names as Principal in the  
within Bond; that \_\_\_\_\_

Who signed the said Bond on behalf of the Principal was then \_\_\_\_\_  
of said corporation; that I know his signature and his signature is genuine; and that said Bond was duly  
signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

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

\_\_\_\_\_ / \_\_\_\_\_

END OF SECTION

15 March 2011 – Bid Set

**INSURANCE REQUIREMENTS**

A. CONTRACTOR'S LIABILITY INSURANCE

1. The insurance required shall be taken out in a company or companies authorized to do such business in the Commonwealth of Massachusetts and satisfactory to the Owner, and shall be written for not less than any limits of liability specified herein below, or required by law, whichever is greater.

a. Workmen's Compensation and other benefits as required under Chapter 152 of the Laws, as amended, as Section 34A of Chapter 149 of the General Laws.

b. Employer's liability with a limit of at least \$300,000 each accident.

c. Comprehensive General Public Liability including Contractor's Liability as applicable to the Contractor's obligations for Elevators. Completed Operations and Products Liability; all on the occurrence basis with Personal Injury coverage and Broad Form Property Damage. Remove the XCU exclusions relating to Explosion, Collapse and Underground Property Damage. Completed Operations Liability shall be kept in force for at least two years after the final completion.

d. Personal Injury and Accidental Death

Each occurrence	\$500,000
Aggregate	\$1,000,000

e. Property Damage

Each occurrence	\$500,000
Aggregate per 12 months	\$1,000,000

f. Comprehensive Automotive Liability including coverage for owned, non-owned and hired automobiles.

g. Bodily Injury and Accidental Death

Each Person	\$500,000
Each Occurrence	\$1,000,000

h. Property Damage

Each Person	\$300,000
-------------	-----------

B. Certificates of Insurance acceptable to the Owner shall be submitted to the Owner simultaneously with the execution of the Contract. Certificates shall indicate that Contractual Liability coverage is in force, as well as deletions of the XCU exclusions. These Certificates shall contain a provision

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that the insurance company will notify the Owner by registered mail at least 30 days in advance of any cancellation, change or expiration of the policies.

C. OWNER'S LIABILITY INSURANCE

1. The Owner shall be named as an additional insured on the Contractor's Liability Insurance Policies.

D. PROPERTY INSURANCE

1. The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value of the Contract Price, allowing for non-insurable items. The insurance shall be taken out in a company or companies against which the Owner has no reasonable objection and shall include the interests of the Owner, the Contractor, Subcontractors and Sub Subcontractors and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including, without duplication, theft, vandalism and malicious mischief. The insurance shall also cover portions of the work stored off the site or in transit which are included in an Application for Payment. If this insurance is written with stipulated amounts deductible, the Owner shall not be responsible for any difference between the payments made by the insurance carrier and the claim.
2. The Contractor shall file the original and one certified copy of all policies with the Owner before exposure to loss may occur. If the Owner is damaged by the failure of the Contractor to maintain such insurance and to so notify the Owner, then the Contractor shall bear all reasonable costs properly attributable thereto.



THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY



DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

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

JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development

GEORGE E. NOEL  
Director of Labor

HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

### Prevailing Wage Rates

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

Classification	Effective Dates and Total Rates								
<b>Construction</b>									
(2 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$44.430	06/01/2011	\$45.180	12/01/2011	\$45.840			
	06/01/2012	\$46.490	12/01/2012	\$47.520					
(3 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$44.500	06/01/2011	\$45.250	12/01/2011	\$45.910			
	06/01/2012	\$46.560	12/01/2012	\$47.590					
(4 & 5 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$44.620	06/01/2011	\$45.370	12/01/2011	\$46.030			
	06/01/2012	\$46.680	12/01/2012	\$47.710					
ADS/SUBMERSIBLE PILOT	08/01/2010	\$103.680	08/01/2011	\$107.800					
AIR TRACK OPERATOR	12/06/2010	\$41.590	06/06/2011	\$42.590	12/05/2011	\$43.140			
	06/04/2012	\$44.140	12/03/2012	\$45.090					
AIR TRACK OPERATOR (HEAVY & HIGHWAY)	12/01/2010	\$41.720	06/01/2011	\$42.720	12/01/2011	\$43.970			
ASBESTOS WORKER (PIPES & TANKS)	12/01/2009	\$40.250							
ASPHALT RAKER	12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640			
	06/04/2012	\$43.640	12/03/2012	\$44.590					
ASPHALT RAKER (HEAVY & HIGHWAY)	12/01/2010	\$41.220	06/01/2011	\$42.220	12/01/2011	\$43.470			
AUTOMATIC GRADER-EXCAVATOR (RECLAIMER)	12/01/2010	\$46.640	06/01/2011	\$47.520	12/01/2011	\$48.390			
	06/01/2012	\$49.340	12/01/2012	\$50.290					
BARCO-TYPE JUMPING TAMPER	12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640			
	06/04/2012	\$43.640	12/03/2012	\$44.590					
BATCH/CEMENT PLANT - ON SITE	12/01/2010	\$46.110	06/01/2011	\$46.990	12/01/2011	\$47.860			
	06/01/2012	\$48.810	12/01/2012	\$49.760					
BLOCK PAVER, RAMMER / CURB SETTER	12/06/2010	\$41.590	06/06/2011	\$42.590	12/05/2011	\$43.140			
	06/04/2012	\$44.140	12/03/2012	\$45.090					
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY)	12/01/2010	\$41.720	06/01/2011	\$42.720	12/01/2011	\$43.970			
BOILER MAKER	01/01/2010	\$55.850							
APPRENTICE: BOILERMAKER - Local 29									
Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	65.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00
Apprentice wages shall be no less than the following:									
Step 1\$42.66/2\$42.66/3\$44.54/4\$46.43/5\$48.31/6\$50.20/7\$52.08/8\$53.97									
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	03/07/2011	\$57.900	09/05/2011	\$59.250	03/05/2012	\$60.650			
APPRENTICE: BRICK/PLASTER/CEMENT MASON - Local 1 Springfield/Pittsfield									
Ratio	Step	1	2	3	4	5	6		
1:5	%	50.00	60.00	70.00	80.00	90.00	95.00		
Apprentice wages shall be no less than the following:									
Step 1\$40.88/2\$44.28/3\$47.69/4\$51.09/5\$54.50/6\$56.20									
BULLDOZER/POWER SHOVEL/TREE SHREDDER /CLAM SHELL	12/01/2010	\$46.640	06/01/2011	\$47.520	12/01/2011	\$48.390			
	06/01/2012	\$49.340	12/01/2012	\$50.290					
CAISSON & UNDERPINNING BOTTOM MAN	12/01/2010	\$50.250	06/01/2011	\$51.250	12/01/2011	\$52.500			

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THE COMMONWEALTH OF MASSACHUSETTS  
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Acting Commissioner of  
Division of Occupational Safety

**Prevailing Wage Rates**

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

Classification	Effective Dates and Total Rates					
CAISSON & UNDERPINNING LABORER	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
CAISSON & UNDERPINNING TOP MAN	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
CARBIDE CORE DRILL OPERATOR	12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640
	06/04/2012	\$43.640	12/03/2012	\$44.590		
CARPENTER	10/04/2010	\$48.150	04/04/2011	\$48.900	10/03/2011	\$49.650
APPRENTICE: CARPENTER - Local 108 Hampden Hampshire						
Ratio	Step	1	2	3	4	5
**	%	50.00	60.00	70.00	75.00	80.00
						80.00
						90.00
						90.00
Pre-6/09 Step1\$21.55/2\$22.97/3\$36.79/4\$39.63/5\$42.47/6\$43.89						
7\$45.31/8\$46.73Post-6/09:1\$21.92/2\$24.76/3\$36.27/4\$37.69/5\$40.23/7&8\$44.19						
** 1: 1-5/2: 6-8/3:9-11/Steps: 6 mos (600 hrs)/rates by step						
CEMENT MASONRY/PLASTERING	03/07/2011	\$58.050	09/05/2011	\$59.360	03/05/2012	\$60.720
CHAIN SAW OPERATOR	12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640
	06/04/2012	\$43.640	12/03/2012	\$44.590		
COMPRESSOR OPERATOR	12/01/2010	\$46.110	06/01/2011	\$46.990	12/01/2011	\$47.860
	06/01/2012	\$48.810	12/01/2012	\$49.760		
CRANE/BACKHOE/FRONT-END LOADER OPERATOR	12/01/2010	\$46.640	06/01/2011	\$47.520	12/01/2011	\$48.390
	06/01/2012	\$49.340	12/01/2012	\$50.290		
DELEADER (BRIDGE)	01/01/2011	\$64.410	07/01/2011	\$65.410	01/01/2012	\$66.410
	07/01/2012	\$67.410	01/01/2013	\$68.410		
APPRENTICE: PAINTER Local 35 - BRIDGES/TANKS						
Ratio	Step	1	2	3	4	5
1:1	%	50.00	55.00	60.00	65.00	70.00
						75.00
						80.00
						90.00
Apprentice wages shall be no less than the following: Steps are 750 hrs.						
Step 1\$29.31/2\$36.86/3\$39.01/4\$41.16/5\$51.51/6\$53.66/7\$55.81/8\$60.11						
DEMO: ADZEMAN	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
DEMO: BACKHOE/LOADER/HAMMER OPERATOR	12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350
APPRENTICE: LABORER Demo Backhoe/Loader/Hammer Operator						
Ratio	Step	1	2	3	4	
1:5	%	60.00	70.00	80.00	90.00	
Apprentice wages shall be no less than the following:						
Step 1\$37.48/2\$40.64/3\$43.79/4\$46.95						
DEMO: BURNERS	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100
APPRENTICE: LABORER Demo Burners						
Ratio	Step	1	2	3	4	
1:5	%	60.00	70.00	80.00	90.00	
Apprentice Wages shall be no less than the following:						
Step 1\$37.33/2\$40.46/3\$43.59/4\$46.72						
DEMO: CONCRETE CUTTER/SAWYER	12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350
DEMO: JACKHAMMER OPERATOR	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100

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**Prevailing Wage Rates**

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

Classification	Effective Dates and Total Rates					
DEMO: WRECKING LABORER	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350
APPRENTICE: LABORER Demo Wrecking Laborer						
Ratio Step	1	2	3	4		
1:5 %	60.00	70.00	80.00	90.00		
Apprentice wages shall be no less than the following:						
Step 1\$36.88/2\$39.94/3\$42.99/4\$46.05						
DIVER	08/01/2010	\$77.520	08/01/2011	\$80.270		
DIVER TENDER	08/01/2010	\$62.570	08/01/2011	\$65.320		
DIVER TENDER (EFFLUENT)	08/01/2010	\$81.250	08/01/2011	\$85.380		
DIVER/SLURRY (EFFLUENT)	08/01/2010	\$103.680	08/01/2011	\$107.800		
ELECTRICIAN	01/01/2011	\$50.050				
APPRENTICE: ELECTRICIAN - Local 7 Zone B						
Ratio Step	1	2	3	4	5	6
2:3**** %	50.00	55.00	60.00	65.00	70.00	75.00
Apprentice wages shall be no less than the following:						
Step 1\$24.97/2\$26.66/3\$33.01/4\$34.70/5\$38.84/6\$40.72						
Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.						
ELEVATOR CONSTRUCTOR	01/01/2011	\$61.610	01/01/2012	\$63.110		
APPRENTICE: ELEVATOR CONSTRUCTOR - Local 41						
Ratio Step	1	2	3	4	5	
1:1 %	50.00	55.00	65.00	70.00	80.00	
Apprentice wages shall be no less than the following:						
Step 1\$38.68/2\$40.97/3\$45.56/4\$47.85/5\$52.44						
ELEVATOR CONSTRUCTOR HELPER	01/01/2011	\$47.850	01/01/2012	\$48.900		
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	12/01/2010	\$41.220	06/01/2011	\$42.220	12/01/2011	\$43.470
FIELD ENG - PARTY CHIEF (BLDG, SITE, HVY CONST)	06/01/1999	\$30.230				
FIELD ENG-CHIEF OF SURVEY(BLDG, SITE, HVY CONST)	06/01/1999	\$31.230				
FIELD ENG-INST./ROD PERSON(BLDG, SITE, HVY CONST)	06/01/1999	\$27.740				
FIRE ALARM INSTALLER	01/01/2011	\$50.050				
FIRE ALARM REPAIR / MAINTENANCE	07/01/2010	\$34.460	06/01/2011	\$35.510	01/01/2012	\$36.010
FIREMAN	12/01/2010	\$46.110	06/01/2011	\$46.990	12/01/2011	\$47.860
	06/01/2012	\$48.810	12/01/2012	\$49.760		
APPRENTICE: OPERATING ENG. - Local 98 Class 3						
Ratio Step	1	2	3	4		
1:6 %	60.00	70.00	80.00	90.00		
Apprentice wages shall be no less than the following:						
Step 1\$34.47/2\$37.38/3\$40.29/4\$43.20						
FLAGGER & SIGNALER (HEAVY & HIGHWAY)	12/01/2010	\$35.780	06/01/2011	\$36.780	12/01/2011	\$36.780
FLOORCOVERER	03/01/2011	\$50.330	09/01/2011	\$51.580		

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**Prevailing Wage Rates**

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

**Classification**

**Effective Dates and Total Rates**

Classification	Ratio	Step	1	2	3	4	5	6	7	8	Effective Dates	Total Rates
APPRENTICE: FLOORCOVERER - Local 2168 Zone III												
	Ratio	Step	1	2	3	4	5	6	7	8		
	1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00		
Apprentice rates shall be no less than the following:						Steps are 750 hrs.						
Step 1\$23.99/2\$25.41/3\$35.61/4\$37.03/5\$39.57/6\$40.99/7\$43.53/8\$44.95												
FORK LIFT							12/01/2010	\$46.330	06/01/2011	\$47.210	12/01/2011	\$48.080
							06/01/2012	\$49.030	12/01/2012	\$49.980		
GENERATORS/LIGHTING PLANTS							12/01/2010	\$42.880	06/01/2011	\$43.760	12/01/2011	\$44.630
							06/01/2012	\$45.580	12/01/2012	\$46.530		
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)							06/01/2010	\$46.780	06/01/2011	\$48.380	06/01/2012	\$49.930
APPRENTICE: GLAZIER - Local 1333												
	Ratio	Step	1	2	3	4	5	6	7	8		
	1:1	%	50.00	56.25	62.50	68.75	75.00	81.25	87.50	93.75		
Apprentice wages shall be no less than the following:												
Step 1\$25.02/2\$27.02/3\$29.52/4\$31.52/5\$34.02/6\$36.02/7\$42.78/8\$44.78												
GRADER/TRENCHING MACHINE/DERRICK							12/01/2010	\$46.640	06/01/2011	\$47.520	12/01/2011	\$48.390
							06/01/2012	\$49.340	12/01/2012	\$50.290		
HVAC (DUCTWORK)							01/01/2011	\$50.950				
HVAC (ELECTRICAL CONTROLS)							01/01/2011	\$50.050				
HVAC (TESTING AND BALANCING - AIR)							01/01/2011	\$50.950				
HVAC (TESTING AND BALANCING -WATER)							09/17/2010	\$54.960	03/17/2011	\$55.460	09/17/2011	\$55.960
							03/17/2012	\$56.460	09/17/2012	\$57.210	03/17/2013	\$57.960
HVAC MECHANIC							09/17/2010	\$54.960	03/17/2011	\$55.460	09/17/2011	\$55.960
							03/17/2012	\$56.460	09/17/2012	\$57.210	03/17/2013	\$57.960
HYDRAULIC DRILLS (HEAVY & HIGHWAY)							12/01/2010	\$41.720	06/01/2011	\$42.720	12/01/2011	\$43.970
INSULATOR (PIPES & TANKS)							09/01/2010	\$52.980				
APPRENTICE: ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Springfield												
	Ratio	Step	1	2	3	4						
	1:4	%	50.00	60.00	70.00	80.00						
Apprentice wages shall be no less than the following:						Steps are 1 year						
Step 1\$33.00/2\$36.99/3\$40.99/4\$44.98												
IRONWORKER/WELDER							03/16/2010	\$52.260				
APPRENTICE: IRONWORKER - Local 7 Springfield												
	Ratio	Step	1	2	3	4	5	6				
		%	60.00	70.00	75.00	80.00	85.00	90.00				
Apprentice wages shall be no less than the following:						Structural 1:6; Ornamental 1:4						
Step 1\$41.62/2\$44.28/3\$45.61/4\$46.94/5\$48.27/6\$49.60												
JACKHAMMER & PAVING BREAKER OPERATOR							12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640
							06/04/2012	\$43.640	12/03/2012	\$44.590		

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### Prevailing Wage Rates

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

Classification	Effective Dates and Total Rates					
LABORER	12/06/2010	\$40.840	06/06/2011	\$41.840	12/05/2011	\$42.390
	06/04/2012	\$43.390	12/03/2012	\$44.340		
APPRENTICE: LABORER - Zone 3 Building & Site						
Ratio Step	1	2	3	4		
1:5 %	60.00	70.00	80.00	90.00		
Apprentice wages shall be no less than the following:						
Step 1	\$30.96/2	\$33.43/3	\$35.90/4	\$38.37		
LABORER (HEAVY & HIGHWAY)	12/01/2010	\$40.970	06/01/2011	\$41.970	12/01/2011	\$43.220
APPRENTICE: LABORER - Zone 3 Heavy & Highway						
Ratio Step	1	2	3	4		
1:5 %	60.00	70.00	80.00	90.00		
Apprentice wages shall be no less than the following:						
Step 1	\$31.09/2	\$33.56/3	\$36.03/4	\$38.50		
LABORER: CARPENTER TENDER	12/06/2010	\$40.840	06/06/2011	\$41.840	12/05/2011	\$42.390
	06/04/2012	\$43.390	12/03/2012	\$44.340		
LABORER: CEMENT FINISHER TENDER	12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640
	06/04/2012	\$43.640	12/03/2012	\$44.590		
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER	12/06/2010	\$40.840	06/06/2011	\$41.840	12/05/2011	\$42.390
	06/04/2012	\$43.390	12/03/2012	\$44.340		
LABORER: MASON TENDER	12/06/2010	\$41.840	06/06/2011	\$42.840	12/05/2011	\$43.390
	06/04/2012	\$44.390	12/03/2012	\$45.340		
LABORER: MASON TENDER (HEAVY & HIGHWAY)	12/01/2010	\$41.220	06/01/2011	\$42.220	12/01/2011	\$43.470
LABORER: MULTI-TRADE TENDER	12/06/2010	\$40.840	06/06/2011	\$41.840	12/05/2011	\$42.390
	06/04/2012	\$43.390	12/03/2012	\$44.340		
LABORER: TREE REMOVER	12/06/2010	\$40.840	06/06/2011	\$41.840	12/05/2011	\$42.390
	06/04/2012	\$43.390	12/03/2012	\$44.340		
This classification applies to the wholesale removal of standing trees including all associated trimming of branches and limbs, and applies to the removal of branches at locations not on or around utility lines.						
LASER BEAM OPERATOR	12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011	\$42.640
	06/04/2012	\$43.640	12/03/2012	\$44.590		
LASER BEAM OPERATOR (HEAVY & HIGHWAY)	12/01/2010	\$41.220	06/01/2011	\$42.220	12/01/2011	\$43.470
MARBLE & TILE FINISHERS	03/07/2011	\$50.980	09/05/2011	\$52.330	03/05/2012	\$53.480
APPRENTICE: MARBLE-TILE-TERRAZZO FINISHER-Local 1 Marble/Tile (Spr/Pitt)						
Ratio Step	1	2	3	4	5	6
1:3 %	50.00	60.00	70.00	80.00	90.00	95.00
Apprentice wages shall be no less than the following:					Steps are 800 hours	
Step 1	\$37.27/2	\$40.01/3	\$42.75/4	\$45.50/5	\$48.24/6	\$49.61
MARBLE MASONS, TILELAYERS & TERRAZZO MECH	03/07/2011	\$57.900	09/05/2011	\$59.250	03/05/2012	\$60.650

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DEVAL L. PATRICK  
Governor

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

JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development

TIMOTHY P. MURRAY  
Lieutenant Governor

GEORGE E. NOEL  
Director of Labor

HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

### Prevailing Wage Rates

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

**Classification**

**Effective Dates and Total Rates**

APPRENTICE: MARBLE-TILE-TERRAZZO MECH - Local 1 Marble/Tile (Spr/Pitt)										
Ratio	Step	1	2	3	4	5	6			
1:5	%	50.00	60.00	70.00	80.00	90.00	95.00			
Apprentice wages shall be no less than the following;										
Step 1\$40.88/2\$44.28/3\$47.69/4\$51.09/5\$54.50/6\$56.20										
MECH. SWEEPER OPERATOR (NON-CONSTRUCTION)						07/01/2010	\$29.590	07/01/2011	\$30.290	
MECH. SWEEPER OPERATOR (ON CONST. SITES)						12/01/2010	\$46.640	06/01/2011	\$47.520	12/01/2011 \$48.390
						06/01/2012	\$49.340	12/01/2012	\$50.290	
MECHANIC/WELDER/BOOM TRUCK						12/01/2010	\$46.110	06/01/2011	\$46.990	12/01/2011 \$47.860
						06/01/2012	\$48.810	12/01/2012	\$49.760	
MILLWRIGHT (Zone 3)						10/01/2010	\$53.400			
APPRENTICE: MILLWRIGHT - Local 1121 Zone 3										
Ratio	Step	1	2	3	4	5	6	7	8	
1:5	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	
Apprentice wages shall be no less than the following;										
Step 1\$34.58/2\$36.09/3\$39.08/4\$40.59/5\$42.85/6\$44.36/7\$46.61/8\$48.12										
MORTAR MIXER						12/06/2010	\$41.090	06/06/2011	\$42.090	12/05/2011 \$42.640
						06/04/2012	\$43.640	12/03/2012	\$44.590	
OILER						12/01/2010	\$41.800	06/01/2011	\$42.680	12/01/2011 \$43.550
						06/01/2012	\$44.500	12/01/2012	\$45.450	
OTHER POWER DRIVEN EQUIPMENT - CLASS VI						12/01/2010	\$39.820	06/01/2011	\$40.700	12/01/2011 \$41.570
						06/01/2012	\$42.520	12/01/2012	\$43.470	
Painter (BRIDGES/TANKS)						01/01/2011	\$64.410	07/01/2011	\$65.410	01/01/2012 \$66.410
						07/01/2012	\$67.410	01/01/2013	\$68.410	
APPRENTICE: PAINTER Local 35 - BRIDGES/TANKS										
Ratio	Step	1	2	3	4	5	6	7	8	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00	
Apprentice wages shall be no less than the following;										
Step 1\$29.31/2\$36.86/3\$39.01/4\$41.16/5\$51.51/6\$53.66/7\$55.81/8\$60.11										
PAINTER (SPRAY OR SANDBLAST, NEW) *						01/01/2011	\$44.480	07/01/2011	\$45.480	01/01/2012 \$46.480
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.						07/01/2012	\$47.480	01/01/2013	\$48.480	
APPRENTICE: PAINTER Local 35 Zone 3 - Spray/Sandblast - New										
Ratio	Step	1	2	3	4	5	6	7	8	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00	
Apprentice wages shall be no less than the following;										
Step 1\$21.24/2\$24.18/3\$25.53/4\$26.87/5\$36.42/6\$37.76/7\$39.10/8\$41.79										
PAINTER (SPRAY OR SANDBLAST, REPAINT)						01/01/2011	\$41.800	07/01/2011	\$42.800	01/01/2012 \$43.800
						07/01/2012	\$44.800	01/01/2013	\$45.800	

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### Prevailing Wage Rates

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

**Classification**

**Effective Dates and Total Rates**

Classification	Ratio	Step	1	2	3	4	5	6	7	8	Effective Dates	Total Rates
APPRENTICE: PAINTER Local 35 Zone 3 - Spray/Sandblast - Repaint	1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:												
Step 1\$19.90/2\$22.71/3\$23.92/4\$25.13/5\$34.54/6\$35.75/7\$36.96/8\$39.38												
PAINTER (TRAFFIC MARKINGS)											12/01/2010	\$40.970
											06/01/2011	\$41.970
											12/01/2011	\$43.220
PAINTER / TAPER (BRUSH, NEW) *											01/01/2011	\$43.080
											07/01/2011	\$44.080
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.											07/01/2012	\$46.080
											01/01/2013	\$47.080
APPRENTICE: PAINTER - Local 35 Zone 3 - BRUSH NEW	1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:												
Step 1\$20.54/2\$23.41/3\$24.69/4\$25.96/5\$35.44/6\$36.71/7\$37.98/8\$40.53												
Steps are 750 hrs.												
PAINTER / TAPER (BRUSH, REPAINT)											01/01/2011	\$40.400
											07/01/2011	\$41.400
											01/01/2012	\$42.400
											07/01/2012	\$44.400
APPRENTICE: PAINTER Local 35 Zone 3 - BRUSH REPAINT	1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:												
Step 1\$19.20/2\$21.94/3\$23.08/4\$24.22/5\$33.56/6\$34.70/7\$35.84/8\$38.12												
Steps are 750 hrs.												
PANEL & PICKUP TRUCKS DRIVER											12/01/2010	\$44.260
											06/01/2012	\$46.320
											12/01/2012	\$47.350
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)											10/04/2010	\$58.460
											04/04/2011	\$58.840
											08/01/2011	\$60.210
PILE DRIVER											10/04/2010	\$58.460
											04/04/2011	\$58.840
											08/01/2011	\$60.210
APPRENTICE: PILE DRIVER - Local 56 Zone 3	1:3	%	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00		
Apprentice wages shall be no less than the following:												
Step 1\$47.62/2\$49.49/3\$51.36/4\$53.23/5\$55.10/6\$56.96/7\$58.83/8\$60.70												
Apprentice wages shall be no less than those set in Zone 1												
PIPELAYER											12/06/2010	\$41.090
											06/06/2011	\$42.090
											12/05/2011	\$42.640
											06/04/2012	\$43.640
											12/03/2012	\$44.590
PIPELAYER (HEAVY & HIGHWAY)											12/01/2010	\$41.220
											06/01/2011	\$42.220
											12/01/2011	\$43.470
PLUMBER & PIPEFITTER											09/17/2010	\$54.960
											03/17/2011	\$55.460
											09/17/2011	\$55.960
											03/17/2012	\$56.460
											09/17/2012	\$57.210
											03/17/2013	\$57.960

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**Prevailing Wage Rates**

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

**Classification**

**Effective Dates and Total Rates**

Classification	Effective Dates	Total Rates
APPRENTICE: PLUMBER/PIPEFITTER - Local 104		
Ratio Step	1	2 3 4 5
1:5 %	45.00	50.00 60.00 70.00 80.00
Apprentice wages shall be no less than the following:		Steps are 2000 hrs.
Step 1\$31.06/2\$32.78/3\$36.22/4\$39.65/5\$48.09		
PNEUMATIC CONTROLS (TEMP.)	09/17/2010	\$54.960 03/17/2011 \$55.460 09/17/2011 \$55.960
	03/17/2012	\$56.460 09/17/2012 \$57.210 03/17/2013 \$57.960
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY)	12/01/2010	\$41.220 06/01/2011 \$42.220 12/01/2011 \$43.470
POWDERMAN & BLASTER	12/06/2010	\$41.840 06/06/2011 \$42.840 12/05/2011 \$43.390
	06/04/2012	\$44.390 12/03/2012 \$45.340
POWDERMAN & BLASTER (HEAVY & HIGHWAY)	12/01/2010	\$41.970 06/01/2011 \$42.970 12/01/2011 \$44.220
PUMP OPERATOR (CONCRETE)	12/01/2010	\$46.640 06/01/2011 \$47.520 12/01/2011 \$48.390
	06/01/2012	\$49.340 12/01/2012 \$50.290
PUMP OPERATOR (DEWATERING, OTHER)	12/01/2010	\$46.110 06/01/2011 \$46.990 12/01/2011 \$47.860
	06/01/2012	\$48.810 12/01/2012 \$49.760
READY-MIX CONCRETE DRIVER	05/01/2008	\$30.870
RESIDENTIAL WOOD FRAME CARPENTER **	04/01/2009	\$35.620
** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement.		
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.		
APPRENTICE: CARPENTER (Residential Wood Frame) - Local 108		
Ratio Step	1	2 3 4 5 6 7 8
** %	60.00	60.00 65.00 70.00 75.00 80.00 85.00 90.00
Apprentice Wages Shall be no less than the following:		** 1: 1-5, 2: 6-8, 3: 9-11
Step 1\$20.13/2\$26.04/2\$27.23/4\$28.43/5\$29.63/6\$30.83/7\$32.03/8\$33.22		
RIDE-ON MOTORIZED BUGGY OPERATOR	12/06/2010	\$41.090 06/06/2011 \$42.090 12/05/2011 \$42.640
	06/04/2012	\$43.640 12/03/2012 \$44.590
ROLLER OPERATOR	12/01/2010	\$45.500 06/01/2011 \$46.380 12/01/2011 \$47.250
	06/01/2012	\$48.200 12/01/2012 \$49.150
ROOFER (Coal tar pitch)	01/01/2011	\$46.000 07/16/2011 \$46.500 01/01/2012 \$46.750
	07/16/2012	\$47.250 01/01/2013 \$47.500
ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg)	01/01/2011	\$45.000 07/16/2011 \$45.500 01/01/2012 \$45.750
	07/16/2012	\$46.250 01/01/2013 \$46.500
APPRENTICE: ROOFER - Local 248		
Ratio Step	1	2 3 4 5 6 7 8
1:3 %	60.00	65.00 70.00 75.00 80.00 85.00 90.00 95.00
Apprentice wages shall be no less than the following:		Steps are 750 hrs.Roofers(Tear Off)1:1; Same as above
Step 1\$23.34/2\$35.94/3\$37.23/4\$38.53/5\$39.82/6\$41.12/7\$42.41/8\$43.71		
ROOFER SLATE / TILE / PRECAST CONCRETE	01/01/2011	\$46.000 07/16/2011 \$46.500 01/01/2012 \$46.750
	07/16/2012	\$47.250 01/01/2013 \$47.500

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**Prevailing Wage Rates**

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

**Classification**

**Effective Dates and Total Rates**

APPRENTICE: ROOFER (Slate/Tile/Precast Concrete) - Local 248											
Ratio	Step	1	2	3	4	5	6	7	8		
1:3	%	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00		
Apprentice wages shall be no less than the following:						Steps are 750 hrs.					
Step 1\$23.64/2\$36.76/3\$38.08/4\$39.40/5\$40.72/6\$42.04/7\$43.36/8\$44.68											
SCRAPER						12/01/2010	\$46.110	06/01/2011	\$46.990	12/01/2011	\$47.860
						06/01/2012	\$48.810	12/01/2012	\$49.760		
SELF-POWERED ROLLERS AND COMPACTORS (TAMPERS)						12/01/2010	\$45.500	06/01/2011	\$46.380	12/01/2011	\$47.250
						06/01/2012	\$48.200	12/01/2012	\$49.150		
SELF-PROPELLED POWER BROOM						12/01/2010	\$42.880	06/01/2011	\$43.760	12/01/2011	\$44.630
						06/01/2012	\$45.580	12/01/2012	\$46.530		
SHEETMETAL WORKER						01/01/2011	\$50.950				
APPRENTICE: SHEET METAL WORKER - Local 63											
Ratio	Step	1	2	3	4	5	6	7	8	9	10
1:3	%	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00
Apprentice wages shall be no less than the following Steps:											
1\$17.64/2\$19.60/3\$25.11/4\$27.39/5\$29.69/6\$31.97/7\$34.24/8\$40.76/9\$43.31/10\$45.86											
SIGN ERECTOR						06/01/2009	\$37.780				
APPRENTICE: SIGN ERECTOR - Local 35 Zone 3											
Ratio	Step	1	2	3	4	5	6	7	8	9	
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	
Apprentice wages shall be no less than the following:											
Step 1\$19.48/2\$23.12/3\$24.36/4\$25.60/5\$30.34/6\$31.58/7\$32.82/8\$34.06/9\$35.30											
SPECIALIZED EARTH MOVING EQUIP < 35 TONS						12/01/2010	\$44.720	06/01/2011	\$45.470	12/01/2011	\$46.130
						06/01/2012	\$46.780	12/01/2012	\$47.810		
SPECIALIZED EARTH MOVING EQUIP > 35 TONS						12/01/2010	\$45.010	06/01/2011	\$45.760	12/01/2011	\$46.420
						06/01/2012	\$47.070	12/01/2012	\$48.100		
SPRINKLER FITTER						01/01/2010	\$56.700				
APPRENTICE: SPRINKLER FITTER - Local 676											
Ratio	Step	1	2	3	4	5	6	7	8	9	10
1:1	%	40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00
Apprentice wages shall be no less than the following Steps:											
1\$32.40/2\$34.43/3\$36.45/4\$38.48/5\$40.50/6\$42.53/7\$44.55/8\$46.58/9\$48.60/10\$50.63											
TELECOMMUNICATION TECHNICIAN						07/01/2010	\$34.460	06/01/2011	\$35.510	01/01/2012	\$36.010
APPRENTICE: TELECOMMUNICATION TECHNICIAN - Local 7 Zone B											
Ratio	Step	1	2	3	4	5	6				
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00				
Apprentice wages shall be no less than the following:											
Step 1\$24.36/2\$25.42/3\$26.48/4\$27.55/5\$28.61/6\$29.69											

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**Classification**

**Effective Dates and Total Rates**

Classification	Effective Dates	Total Rates
TERRAZZO FINISHERS	03/07/2011	\$50.980
APPRENTICE: MARBLE-TILE-TERRAZZO FINISHER-Local 1 Marble/Tile (Spr/Pitt)	09/05/2011	\$52.330
	03/05/2012	\$53.480
Ratio Step 1 2 3 4 5 6		
1:3 % 50.00 60.00 70.00 80.00 90.00 95.00		
Apprentice wages shall be no less than the following:	Steps are 800 hours	
Step 1\$37.27/2\$40.01/3\$42.75/4\$45.50/5\$48.24/6\$49.61		
TEST BORING DRILLER	12/01/2010	\$50.500
TEST BORING DRILLER HELPER	12/01/2010	\$49.220
TEST BORING LABORER	12/01/2010	\$49.100
TRACTORS	12/01/2010	\$45.500
	06/01/2012	\$48.200
	12/01/2012	\$49.150
TRAILERS FOR EARTH MOVING EQUIPMENT	12/01/2010	\$45.300
	06/01/2012	\$47.360
	12/01/2012	\$48.390
TUNNEL WORK - COMPRESSED AIR	12/01/2010	\$61.680
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE)	12/01/2010	\$63.680
TUNNEL WORK - FREE AIR	12/01/2010	\$53.750
TUNNEL WORK - FREE AIR (HAZ. WASTE)	12/01/2010	\$55.750
VAC-HAUL	12/01/2010	\$44.720
	06/01/2012	\$46.780
	12/01/2012	\$47.810
WAGON DRILL OPERATOR	12/06/2010	\$41.090
	06/04/2012	\$43.640
	12/03/2012	\$44.590
WAGON DRILL OPERATOR (HEAVY & HIGHWAY)	12/01/2010	\$41.220
WATER METER INSTALLER	09/17/2010	\$54.960
	03/17/2012	\$56.460
	09/17/2012	\$57.210
	03/17/2013	\$57.960

**Outside Electrical - West**

EQUIPMENT OPERATOR	08/31/2008	\$46.540
GROUNDMAN	08/31/2008	\$29.550
GROUNDMAN / TRUCK DRIVER	08/31/2008	\$41.550
HEAVY EQUIPMENT OPERATOR	08/31/2008	\$48.910
JOURNEYMAN LINEMAN	08/31/2008	\$54.660
APPRENTICE: LINEMAN (Outside Electrical) - West Local 42		
Ratio Step 1 2 3 4 5 6 7		
1:2 % 60.00 65.00 70.00 75.00 80.00 85.00 90.00		
Apprentice wages shall be no less than the following:		
Step 1\$31.17/2\$33.29/3\$41.92/4\$44.05/5\$46.17/6\$48.29/7\$50.41		
TELEDATA CABLE SPLICER	01/01/2007	\$30.200
TELEDATA LINEMAN/EQUIPMENT OPERATOR	01/01/2007	\$28.820
TELEDATA WIREMAN/INSTALLER/TECHNICIAN	01/01/2007	\$28.820
TRACTOR-TRAILER DRIVER	08/31/2008	\$46.540

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Lieutenant Governor

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

JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development

GEORGE E. NOEL  
Director of Labor

HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

**Prevailing Wage Rates**

**Awarding Authority:** Soldiers' Home in Holyoke

**Contract Number:**

**City/Town:** HOLYOKE

**Description of Work:** Fire Alarm System Works - Add, Change, Modify existing fire detection devices. Upgrade existing system to addressable

**Job Location:** 110 Cherry Street

Classification	Effective Dates and Total Rates	
TREE TRIMMER	02/01/2009	\$19.010
This classification applies only to the trimming of branches on and around utility lines.		
TREE TRIMMER GROUNDMAN	02/01/2009	\$17.060
This classification applies only to the trimming of branches on and around utility lines.		

Additional Apprentice Information:

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

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

All steps are six months (1000 hours) unless otherwise specified.

- \* Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof.
- \*\* Multiple ratios are listed in the comment field.
- \*\*\* The job site ratio of 2 apprentices (APP) for every 3 journeymen (JM) is allowed as follows:  
1 JM: 1 APP; 2-3 JM: 2 APP; 4-6 JM: 4 APP; 7-9 JM: 6 APP; 10-12 JM: 8 APP; 13-15 JM: 10 APP; etc.
- \*\*\*\* The job site ratio of 2 apprentices (APP) for every 3 journeymen (JM) is allowed as follows:  
1-2 JM: 1 APP; 3-4 JM: 2 APP; 5 JM: 3 APP; 6-7 JM: 4 APP; 8 JM: 5 APP; etc.

**This wage schedule must be posted at the work site in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.**

**MODIFICATIONS TO AIA DOCUMENT A-201**

**GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION EDITION**

- A. The AIA Document A-201, 2007 Edition, General Conditions of the Contract for Construction, which are included as a part of these specifications may have some requirements which are in conflict with state statutes. If any condition arises in which a conflict exists, the state statute will govern.

## SUPPLEMENTARY CONDITIONS

### GENERAL

- A. The following supplements modify the "General Conditions of the Contract for Construction", AIA Document A201, Fifteenth Edition, 2007.
- B. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions shall remain in effect.

## ARTICLE 1 – GENERAL PROVISIONS

### 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following to Subparagraph 1.2.1:

"...In the event of conflict or discrepancies among the Contract Documents, interpretations will be based on the following priorities.

1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General Conditions of the Contract for Construction.
5. Drawings and Specifications.

In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality and greater quantity of work shall be provided in accordance with the Architect's interpretation."

Add the following Subparagraph to Paragraph 1.2:

1.2.4 The Sections of Division 1 – General Requirements of the Specifications govern the execution of work of all Sections of the Specifications."

### 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE.

Add the following subparagraph to Paragraph 1.56.1:

"1.5.3 The contractor may obtain electronic copies of the Drawings for his use, only for this project. In accepting and utilizing any drawings or other data on any form of electronic media generated and provided by the Architects, the Owner and its agents covenant and agree that all such drawings and data are instruments of service of the Architect, who shall be deemed the author of the drawings and data, and shall retain the common law, statutory law and other rights, including copyrights. The Owner and its agents further agree not to use these drawings and data, in whole or in part for any purpose or project other than the project indicated. The Owner and its agent agrees to waive all claims against the Architect, resulting in damage, liability or costs, or loss of any kind, from any unauthorized changes or reuse of the drawings and data for this project or any other project, by anyone other than the Architect. In addition, the Owner and its agents agrees to the fullest

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extent permitted by law to indemnify and hold the Architect harmless from any damage, liability or costs, including reasonable attorneys fees and costs of defense arising from any changes made by anyone other than the Architect or from any reuse of the drawings and data without prior written consent of the Architect.

The cost of providing electronic drawings for this project is \$2,000.00”.

## **ARTICLE 2 – OWNER**

### **2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

Add the following Clause to Subparagraph 2.2.3:

“2.2.3.1 Data concerning site, size, access to site, staging and storing, present obstructions on or near the site, conditions of existing adjacent structures, locations and depths of sewers, conduits or pipes, gas lines, position of sidewalks, curbs, pavements, and other data concerning the site conditions, has been obtained from sources Owner believes reliable. Accuracy of such data, however, is not guaranteed and is furnished solely for accommodation of Contractor. Use of such data is made at the contractor’s sole risk and expense.”

Delete Subparagraph 2.2.5 and substitute the following:

“2.2.5 The Contractor will be furnished free of charge 2 copies of Drawings and Project Manuals. Additional sets will be furnished at eh cost of reproduction, postage and handling.”

## **ARTICLE 3 – CONTRACTOR**

### **3.4 LABOR AND MATERIALS**

Delete Subparagraph 3.4.2 and substitute the following Subparagraphs:

“3.4.2 After the Contract has been executed, the Architect will consider a formal request for the substitutions of products in place of those specified only under the conditions set forth in the General Requirements, Division 1 of the Specifications. By making requests for substitutions, the Contractor:

3.4.2.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

3.4.2.2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

3.4.2.3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect’s redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and

3.4.2.4 shall coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be completed in all respects.”

### **3.5 WARRANTY**

Add the following Clause to 3.5.1:

3.5.1.1 The Contractor shall submit, prior to the first Application for Payment, statement from materials and systems manufacturers’, that they accept the conditions and requirements for warranties for their product or

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system. Approval for payment for materials or systems, including labor to install, will be withheld if the Contractor fails to submit manufacturers' acceptance to special conditions and requirements as specified."

Add the following Subparagraphs 3.5.2 and 3.5.3:

**"3.5.2** As required by Construction Documents, Contractor shall obtain written warranty from manufacturer and installer and deliver it to Architect at time of work of warranty is delivered and installed.

**3.5.3** Unless otherwise specified, the Contractor shall warrant (guaranty) all work against defects resulting from the use of material, workmanship, or equipment which is inferior, defective or not in accordance with the terms of the Contract. This warranty shall be in effect for one year from the date of issuance of the Certificates of Substantial Completion for the Project or designated portions thereof and shall be in addition to, and not substitute for, any other rights of Owner under Contract Documents or existing in law."

### **3.6 TAXES**

Add the following to end of Paragraph 3.6:

" . . . The Contractor shall include no amount for State Sales Tax or for Federal Excise on products purchased for this Project. This project is exempt from payment of state sales tax and use tax. A tax exemption number will be provided after the bid award and contract signing."

### **3.7 PERMITS, FEES, AND NOTICES**

Add the following to end of Subparagraph 3.7.1:

" . . . The City of Holyoke will waive its fees for the permits and inspections necessary for the proper execution and Completion of Work."

### **3.8 ALLOWANCES**

Add the following to the end of subparagraph 3.8.2.2:

" . . . except when installation is specified as part of the allowances in General Requirements, Division 1, of the Specifications."

### **3.9 SUPERINDEPENDENT**

Add the following Subparagraph:

**"3.9.3.1** The Contractor's site representatives shall be satisfactory to Owner, based upon credentials to be submitted by Contractor, and such representatives shall be changed only with consent of Owner. If for any reason Contractor's representatives are unsatisfactory, and upon request of Owner or architect, other qualified representatives shall be substituted." "The Owner and Architect shall have authority to require the removal of any contractor's or subcontractor's employee from the site if their workmanship or presence is a detriment to the project.

### **3.15 CLEANING UP**

Add the following Subparagraph:

**3.15.3** No burning of rubbish at the job site will be permitted. Provision for removal of rubbish shall be made by the Contractor at no additional cost to the local municipality.

**3.15.4** All waste materials generated during this Work shall be classified and handled in accordance with local, state, and federal waster regulations. Materials that meet the definition of "Hazardous Waste", or "Massachusetts Regulated Waste" shall be permitted, manifested, and disposed of in accordance with applicable regulations. Copies of permits, manifested, and disposal receipts shall be provided to the Owner prior to application for final payment.

**3.15.5** The Owner shall be the generator of all hazardous or regulated waste materials that were in place at this facility prior to start of this Work. The Contractor shall be the generator of all other waste materials generated during this Work, including, but not limited to, surplus construction materials.

### **3.17 ROYALTIES, PATENTS AND COPYRIGHTS**

Add the following to the end of Subparagraph 3.17.1:

"In the event of legal action arising out of such infringement for which the Contractor is responsible and which action has the effect of stopping the Work, the Owner may require the Contractor to substitute other products of like kind as will make it possible to pursue and complete the Work. Costs and expenses caused thereby shall be borne by the Contractor."

## **ARTICLE 4 - ADMINISTRATION OF THE CONTRACT**

### **4.2 ADMINISTRATION OF THE CONTRACT**

Add the following Clause to Subparagraph 3.17.1:

**4.2.2.1** Where it is stated in the Documents that the Contractor shall pay for services of the Architect, such payment shall be at a rate of two and one half (2.5) times the Architect's Direct Personnel Expense plus any expenses incurred in providing such services. Direct Personnel Expense is defined as the direct salaries of Architect's personnel engaged on the Project and the portion of the cost of their mandatory and customary contributions and benefits, insurance, sick leave, holidays, vacations, pensions and similar contribution benefits."

Delete Subparagraph 4.2.10 and substitute and the following:

**4.2.10** A Project Representative will be employed at the site by the Awarding authority. The Project Representative's duties, responsibilities and limitations of authority are set forth in AIA Document B352, Duties, Responsibilities and Limitations of Authority of the Project Representative, a copy of which is bound in this Project Manual."

## **ARTICLE 5 – SUBCONTRACTORS**

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

Add the following Subparagraph 5.2.1:

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"5.2.1.1 To facilitate and expedite the investigations of proposed Subcontractors, Sub-subcontractors, fabricators and suppliers of materials and equipment, the Contractor, at the request of the Owner, shall submit a statement in writing in sufficient detail to establish that each has the capability, experience, reliability and uncommitted productive capacity to carry out the Work to be performed pursuant to each such proposed subcontract, sub-subcontract or procurement contract, in a manner consistent with the requirement of this Contract for Construction. All such submittals shall include a fully detailed analysis of principal personnel and organization, financial condition, construction plant, equipment and facilities."

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

### **6.2 MUTUAL RESPONSIBILITY**

Add the following Clause to Subparagraph 6.2.5:

"6.2.5.1 If a 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 there from the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorney's fees and court arbitration costs which the Owner has incurred."

## **ARTICLE 7 – CHANGES IN WORK**

### **7.1 CHANGES**

Add the following to end of Subparagraph 7.1.1:

". . . The Contractor's proposal for a change in the Work shall be itemized completely and shall include materials costs and quantities; labor wages, time, insurance and pensions; equipment rental, other than small tools. There shall be no extension in the Contract time unless the Contractor can effectively demonstrate that the work delayed is on the critical path of Project Schedule."

### **7.2 CHANGE ORDERS**

Add the Clause to Subparagraph 7.2:

"7.2.2 Methods used in determining adjustments to the Contract Summary include those listed in Section 7.3.3. Subparagraphs 7.3.3 and 7.3.6 apply to Change Orders as well as to Change Directives."

### **7.3 CONSTRUCTION CHANGE DIRECTIVES**

Change Subparagraph 7.3.6 to include the following:

In the first sentence delete the words "as set forth in the Agreement" and substitute "in accordance with Subparagraph 7.3.11" which follows.

Add the following Subparagraph and Clauses to Paragraph 7.3:

"7.3.11 In Subparagraph 7.3.6, the allowance for the combined overhead and profit included in the total cost

to the Owner for a change in the Work shall be based on the following schedule:

**7.3.11.1** For the Contractor, the work performed by the Contractor's own forces: 10 percent of the net cost. Net cost shall be the cost of labor and materials only. All other costs, such as, insurance and bonds shall be factored after the net cost total.

**7.3.11.2** For the Contractor, for work performed by one or more Subcontractors: 10 percent of the combined net cost of additions and deductions of the Subcontractors. Net cost shall be the cost of labor and materials only. All other costs, such as insurance and bonds shall be factored after the net cost total.

**7.3.11.3** For each subcontractor, for Work performed by the Subcontractor or his Sub-subcontractors: 10 percent of the combined net cost of their Work. Net cost shall be the cost of labor and materials only. All other costs, such as, insurance and bonds shall be factored after the net cost total.

**7.3.11.4** In any event, the total allowance for overhead and profit for a Change in the Work shall not exceed 20 percent of the net cost of the Work.

**7.3.11.5** For a Change in the Work resulting in a net deduction in costs, there will be no allowance for overhead and profit.

**7.3.11.6** Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.

**7.3.11.7** Proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500 be approved without such itemization."

## **ARTICLE 8 - TIME**

### **8.2 PROGRESS AND COMPLETION**

Add the following Subparagraph to Paragraph 8.2:

**"8.2.4** Except in the event of an emergency, no substantial field operations shall be performed outside of regular working hours without prior approval of the architect and the Owner. The Contractor shall not be entitled to additional compensation for work performed outside of regular working hours."

### **8.3 DELAYS AND EXTENSIONS OF TIME**

Add the following Clauses to Subparagraph 8.3.2:

**"8.3.2.1** Claims of delay and requests for extension of time shall set forth in detail the circumstances of such claim, the dates upon which claimed delay began and ended, and the number of days' extension of time requested. The Contractor shall provide supporting documentation as Architect may require, including a revised Construction Schedule indicating the affect of the circumstances which form the basis for the claim.

**8.3.2.2** The Contractor shall not be entitled to an extension of time for each and every one of a number of causes which have concurrent and interrelated effect on the progress of the Work.

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**8.3.2.3** Claims for extension of time arising out of authorized changes in the Work shall be made in writing prior to or concurrent with the submission of the Contractor's proposal for such damage. No extension of time arising out of changes in the Work will be granted after the date upon which the Contractor is authorized to proceed with such change unless specific provision for an extension of time has been incorporated in the authorization.

**8.3.2.4** Any additional cost to the Contractor arising from such change shall be included in the amended Contract Sum set forth in such Change Order. No claim for damages for delay, arising from such change in the Work, shall be recognized or be deemed valid."

Add the following Subparagraph to Paragraph 8.3.3:

"**8.3.3.1** Extension of the Contract Time shall be the Contractor's sole and exclusive remedy for delay of any kind. The Contractor expressly waives any and all right to claims and damages for any delay."

## **ARTICLE 9 – PAYMENTS AND COMPLETIONS**

### **9.2 SCHEDULE OF VALUES**

Add the following clause to Subparagraph 9.2:

"**9.2.1** The Contractor shall certify the Schedules of Values, broken down into major construction components,

### **9.3 APPLICATIONS FOR PAYMENT**

Add the following sentences to the end of Subparagraph 9.3.1:

". . . Form of Application for Payment shall be a notarized AIA Document G702, Application and Certificate for Payment, supported with AIA Document G 7-3, Continuation Sheet."

Add the following Clause to Subparagraph 9.3.1:

**9.3.1.3** During progress of the Work the Owner will pay Contractor 95 percent of the total amount of each payment due. The remaining 5 percent will be retained by the Owner until the Work is completed and accepted in accordance with the Contract Documents."

Delete the first two sentences of Subparagraph 9.3.2 and substitute the following:

"Unless otherwise specifically approved, the Owner will pay only for material and equipment delivered and incorporated in the Work. If approved in advance by the Owner, payment may be similarly made for material and equipment suitably stored on site or off site at a location agreed upon in writing."

Add the following Clauses to Subparagraph 9.3.2:

"**9.3.2.1** In addition, for consideration of payment for stored products:

- a) Storage shall be agreed upon in advance, prior to shipment.
- b) Location of storage shall be agreed upon in advance.
- c) Contractor shall be responsible for, and pay costs of, the verification and inspection of storage.

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- d) Contractor shall document current and adequate insurance coverage of the stored materials.
- e) Contractor shall provide a completed title of the material in the Owner's name.

9.3.2.2 Schedule of Values and Construction Schedule will be considered in decision on any specific request for payment for storage.

9.3.2.3 Payment of material and equipment delivered and stored shall not relieve Contractor of responsibility for furnishing equipment and material required for the Work in the same manner as if such payment were not made."

Add the following Clauses to 9.3.3:

"9.3.3.1 The contractor shall certify that the Application for Payment is correct and complete, and the Work is complete and in accordance with the Contract Document and approved Shop Drawings.

9.3.3.2 The Contractor shall submit, with each Application for Payment, lien waivers, for the Contractor, subcontractors, material suppliers and other persons or entities which are due payment based on the previous Application for Payment."

Add the following Subparagraph and Clauses to 9.3:

"9.3.4 If payment for stored products is approved, Contractor shall furnish with Application for Payment an invoice establishing value of material and equipment stored along with a statement of amount to be paid vendor.

9.3.4.1 Such stored items are subject to prior approval for storage and to inspection by Architect and Owner before payment is recommended.

9.3.4.2 Contractor shall give Owner Certificates of Insurance in accordance with Contract Documents for the full value of the items stored. Insurance to be maintained until items are incorporated in the Work."

## 9.6 PROGRESS PAYMENTS

Add the following Clause to Subparagraph 9.6.2:

"9.6.2.1 Contractors shall furnish with Application for Payment satisfactory evidence of payment to vendors of products placed in approved storage. This shall be done within 30 days after date of progress payment which includes payment for such stored items. Satisfactory evidence of payment shall include the Release of Liens form included in the Specifications as well as one of the following:

- a) Contractor's canceled check in correct amount with identification of invoices paid.
- b) A letter or telegram from vendor with authorized signature stating amounts and invoices paid.
- c) A receipted invoices."

## 9.7 FAILURE OF PAYMENT

Add the following Subparagraph to 9.7:

"9.7.1 If Contractor, in Application for Payment, does not submit evidence of payment to vendor for material and equipment stored, the Architect will recommend deduction of the amount previously allowed for the items stored from the current or subsequent Application for Payment."

## 9.11 LIQUIDATED DAMAGES

Add the following new Paragraph to Article 9:

"9.11.1 The Contractor and the Contractor's surety, if any, shall be liable for and shall pay the Owner the sums hereinafter stipulated as liquidated damages for each calendar day of delay until work is Substantially Completed. See Division 1 01000A – Special Supplementary Conditions for Substantial Completion date and dollar amount per day for liquidated damages."

## ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

### 10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Clauses to Subparagraph 10.2.4:

"10.2.4.1 When there are indications that the use of explosives or other hazardous materials, equipment or unusual methods is necessary, the Contractor shall give the Owner reasonable advance notice of the conditions.

10.2.4.2 The Contractor shall be solely responsible for the handling, storage, and use of explosive or other hazardous materials when their use is permitted.

10.2.4.3 The Contractor shall not bring explosives onto the site or use in the Work without the prior written permission of the Architect. For such use, the Contractor shall obtain necessary permits with copies to the Architect. Contractor shall furnish Owner and Architect with certificated indicating proper and adequate insurance.

Add the following Subparagraphs to Paragraph 10.2:

10.2.8 The Contractor shall be responsible for the adequate strength and safety of all scaffolding, staging and hoisting equipment and for temporary shoring, bracing and tying.

10.2.9 The Contractor shall furnish approved hard hats, other personal protective equipment as required, approved first aid supplies, name of first aid attendant and posted list of emergency facilities.

10.2.10 The Contractor shall take immediate action to correct any hazardous conditions reported.

10.2.11 No unauthorized visitors shall be allowed on or in the Work site without permission from the Owner or the Owner's Representative.

10.2.12 The Contractor shall comply with the requirements of the Occupational Safety and Health Act and the Construction Safety Act of 1969, including all standards and regulations which have been promulgated by the governmental authorities which administer such acts; and said requirements, standards and regulations are incorporated herein by reference.

10.2.12.1 The Contractor shall be directly responsible for compliance therewith on the part of its agents, employees, material suppliers, and all citations, assessment, fines or penalties which may be incurred by reason of its agents and Subcontractors, to so comply.

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**10.2.12.2** The Contractor shall indemnify SBA and save them harmless from any and all losses, cost and expenses, including fines and reasonable attorney's fees incurred by SBA by reason of real or alleged violation of such laws, ordinances, regulations and directives, Federal, State and Local, which are currently in effect or which become effective or which become effective in the future, by the Contractor, its Subcontractor or material suppliers.

### **10.3 HAZARDOUS MATERIAL**

Add the following Clause to Subparagraph 10.3"

**10.3.4** The Contractor, when providing, using, storing, delivering, or disposing of any toxic, hazardous or potentially dangerous materials, shall advise the Town, in writing, of the condition of such hazardous materials in advance of conducting any Work and is responsible for protecting his own employees, those of the Town, and all agents from the hazards associated with such materials. The Contractor shall furnish written directions, precautions, or training, provided or made available from the supplier of the materials, or other acceptable source, for use by all persons who may be subject to the hazard. The Contractor shall comply with all applicable regulations and laws. The Contractor shall dispose of any hazardous or toxic substances in accordance with all applicable regulations or laws, including E.P.A. and D.O.T and shall provide the Town with appropriate generated E.P.A number. The Contractor shall perform all required procedures necessary to insure that there will be no discharge, spillage, uncontrolled loss, seepage or filtration of any hazardous or toxic waste on the site caused by his operations. Contractor is responsible for any and all costs and liabilities associated with the clean up of any such spillage, etc., or as required by regulating authorities having jurisdiction, and holds the Town and its agents, harmless against any current or future liabilities resulting from such incidents.

### **10.4 EMERGENCIES**

Add the following Clause to Subparagraph 10.4.1

**"10.4.1.1** The Contractor shall promptly notify insurers as applicable, the Architect and the Owner of the Nature of the emergency. Immediately thereafter, the Contractor shall submit to the Architect a written report including description of circumstances of the emergency and details of actions taken."

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

### **11.1 CONTRACTOR'S LIABILITY INSURANCE**

Add the following Clauses to Subparagraph 11.1.3:

**"11.13.1** General Contractor shall submit evidence of Workers Compensation Experience Modification Factor of 1.05 or less. The following subcontractors shall submit evidence or Workers Compensation Experience Modification Factor of 1.05 or less

- 1) Phasing of Projects
- 2) Electrical
- 3) Mechanical

## **ARTICLE 13 – MISCELLANEOUS PROVISION**

### 13.5 TESTS AND INSPECTIONS

Add the following Clauses to Subparagraph 13.5.4:

**13.5.4.1** If Architect's observation or if inspection or testing undertaken pursuant to this Paragraph reveals that in any one of a number of identical or similar elements, incorporated in the Work, fails to comply with the requirements of the Contract Documents or the regulations or orders of any public authority to order inspection and testing of any or all such representative elements as he may consider necessary. The Contractor shall bear costs of testing, correction of the Work and the Architect's additional services made necessary thereby.

Add the following new Paragraph 13.8 to Article 13:

### 13.8 EQUAL OPPORTUNITY

**13.8.1** The Contractor shall maintain policies of employment as follows:

**13.8.1.1** The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

**13.8.1.2** The Contractor and Contractor's Subcontractors shall, in all solicitations or advertisements for employees place by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin."

**13.8.1.3** The Contractor shall comply with all provisions of the Civil Rights Act of 1964, The Equal Employment Opportunity Act of 1972, Executive orders 11246, 11375, 11478, and if applicable, the Fair Employment Law and Section.

### ARTICLE 15 – CLAIMS AND DISPUTES

Add the following Clause to 15.1.5.2

". . . There shall be no extension of the Contract time for adverse weather conditions unless the number of days of inclement weather is substantially greater or conditions substantially more severe than the average for the calendar period as recorded by a recognized weather observation agency."

Add the following Clause to 15.1.5

**15.1.5.3** No extension of the Contract Time shall be granted unless Contractor can demonstrate to Architect's satisfaction, that work delayed is on the critical path of the Work.

**15.1.5.4** The Architect shall have the right to defer his decision on any claim, made pursuant to the provisions of the Contract, until the actual effect which forms the basis of the claim may be fully assessed."

**15.4 ARBITRATION (was 4.6)**

Add the following Clause to Subparagraph 4.6.1:

**"15.1.5.3** In addition and prior to arbitration, the Awarding Authority shall have the right to require or reject settlement of disputes by mediation under the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Mediation shall commence, unless otherwise agreed, within the same time limits stipulated in Subparagraphs 4.4.6 ad 4.5.1 for the filing of a notice of a claim in arbitration. Such time limits shall then be extended for arbitration by ten days and the duration of the mediation process."

END OF SUPPLEMENTARY CONDITONS

## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.

B. Related Section:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.2 PROJECT INFORMATION

A. Project Identification: Soldiers' Home in Holyoke

1. Project Location: 110 Cherry Street, Holyoke, MA 01040.

B. Owner: Soldiers' Home Holyoke

1. Owner's Representative: Don Sargent, Director of Construction

C. Architect: Steffian Bradley Architects, One Corporate Road Suite 102, Enfield, CT 06082

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. Installation of delayed egress magnetic locking hardware at fourteen (14) egress doors in the Soldiers' Home tied to an alarm at closest Nurse Station to indicate to the nursing staff that an exit door has been or is attempting to be opened. In addition, (7) swing gates

B. Type of Contract.

1. Project will be constructed under a single prime contract.

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1.4 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations to areas required to complete scope of work.
  - 2. Driveways, Walkways and Entrances: Keep driveways, parking garage, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.

1.5 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
  - 2. Notify the Owner not less than 72 hours in advance of activities that will affect Owner's operations.
- B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
  - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
  - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
  - 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
  - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

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1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8 a.m. to 5 p.m., Monday through Friday, except as otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify Owner not less than two (2) days in advance of proposed utility interruptions.
  - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
- E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.
- F. Controlled Substances: Use of tobacco products and other controlled substances on the Project site is not permitted.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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SECTION 011450 – CUTTING AND PATCHING

PART 1 GENERAL

- 1.1 APPLICABILITY: This Section applies to all work of the Contract.
- 1.2 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- 1.3 SUMMARY OF WORK: This Section includes administrative and procedural requirements for cutting and patching.
- 1.4 SUBMITTALS:
- A. Cutting and Patching Proposal: Submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. Include the following information, as applicable, in the proposal:
    - 1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
    - 2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
    - 3. List products to be used and firms or entities that will perform work.
    - 4. Indicate dates when cutting and patching will be performed.
  - B. Utilities: List utilities that cutting and patching procedures will disturb or affect, as well as utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
    - 1. Provide at least seven (7) days advance notice to Soldier's Home Holyoke Project Manager and obtain written approval prior to interrupting services to Owner-occupied spaces.
  - C. Structure: Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
  - D. Approval Limitations: Approval by Owner to proceed with cutting and patching does not waive the Owner's right to later require complete removal and replacement of unsatisfactory work.
  - E. Latent Conditions: Where construction work uncovers existing holes, cracks, penetrations and other openings, unsuitably patched or fire-stopped walls, or damaged or unstable construction

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installations, the contractor shall contact the Owner's Representative as soon as possible to review the condition and make a determination of further action. Any and all corrections to existing conditions shall be noted in the daily log. No compensation for such changes will be made unless first verified and agreed to by the Project Manager and determination made that such condition was not identified nor capable of being identified during the bid period.

1.5 QUALITY ASSURANCE:

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
1. Foundation Construction
  2. Bearing and Retaining Walls
  3. Structural Concrete
  4. Structural Steel
  5. Lintels
  6. Timber and Primary Wood Framing
  7. Structural Decking
  8. Stair Systems
  9. Miscellaneous Structural Metals
  10. Exterior Curtain-Wall Construction
  11. Equipment Supports
  12. Piping, Ductwork, Vessels and Equipment
  13. Structural Systems of Special Construction in Division 13
- B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended or would result in increased maintenance or decreased operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety-related systems:
1. Primary Operational Systems and Equipment
  2. Air or Smoke Barriers
  3. Water, Moisture or Vapor Barriers
  4. Membranes and Flashings
  5. Fire Protection Systems
  6. Noise and Vibration Control Elements and Systems
  7. Control Systems
  8. Communication Systems
  9. Conveying Systems
  10. Electrical Wiring Systems
  11. Operating Systems of Special Construction in Division 13 Sections
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied

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spaces in a manner that would, in the Owner's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

- D. Visual Matching: If possible, retain the original installer or fabricator to cut and patch visible work. If it is impossible or impractical to engage the original installer or fabricator, engage another recognized, experienced and specialized firm.
- 1.6 WARRANTIES: Replace, patch and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.
- 1.7 PATCHING MATERIALS, GENERAL: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.
- 1.8 INSPECTION: Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- A. Before proceeding, meet at the project site with parties involved with cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- 1.9 PREPARATION:
- A. Temporary Support: Provide temporary support of work to be cut.
  - B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the project that might be exposed during cutting and patching operations.
  - C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
  - D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.
- 1.10 CUTTING AND PATCHING PERFORMANCE REQUIREMENTS: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- A. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
  - B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original installer;

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comply with the original installer's recommendations.

1. Use hand or small power tools designed for sawing or grinding, not hammering and chopping.
  2. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  3. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
  4. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
  5. Where services are required to be removed, relocated or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
  2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wallcoverings, and replace with new materials, if necessary, to achieve uniform color and appearance.
  4. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
  5. Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- 1.11 CLEANING: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

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PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01045

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**SECTION 01170**

**CONTINUING OCCUPANCY PROCEDURES**

**PART 1 GENERAL**

- 1.1 **APPLICABILITY:** This Section applies to all work of the Contract.
- 1.2 **RELATED DOCUMENTS:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section. See also BMC Policy documents at the end of the Division 1 Specifications.
- 1.3 **SUMMARY OF WORK:** This Section includes administrative and procedural requirements governing maintenance of the Owner's continuing occupancy and use of areas near areas of work.
- 1.4 **PRIMARY RULES:** The following primary rules shall govern the work:
  - A. Conduct all work to avoid interference with or interruption of the Owner's normal business.
  - B. In all cases of conflict, the Owner's needs shall govern.
  - C. Fully cooperate with the Owner in every possible way.
- 1.5 **INFECTION CONTROL RISK ASSESSMENT (ICRA)/INTERIM LIFE SAFETY MEASURES:** Each Contractor shall fully cooperate with the "Infection Control Risk Assessment and Interim Life Safety Measures" checklists (included herein) based on NFPA 101 Life Safety Code. Since this is an occupied hospital, these "Interim Life Safety Measures" are an extremely important Contract requirement.
  - A. "Interim Life Safety Measures" Checklists: Each Contractor shall use the checklist to ensure compliance with "Interim Life Safety Measures". The checklist shall be completed daily by the Contractor's Project Superintendent. Completed records shall be provided at a minimum of monthly along with payment requisitions, or, preferably at the weekly project meetings. The checklist is provided as part of the ICRA (Infection Control Risk Assessment) documentation for the project. Contractors are required to identify and record any unusual conditions or safety issues that occur.
- 1.6 **ENTRANCE INTO OWNER-OCCUPIED AREAS:** Restrict workers and prevent access to Owner-occupied areas, except for corridors and other spaces to which the Contractor is permitted access by the Owner in writing. Appropriate delivery and waste routes, toilet and elevator facilities available for use and other related information are identified in the ICRA document.

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- A. Provide at least ten (10) days advance notice of need to enter any Owner-occupied space and obtain the Owner's written permission before entering the space.
- 1.7 WORK IN AN OWNER-OCCUPIED SPACE: In general, the intent is to effectively isolate and separate Owner-occupied spaces from construction spaces. If minor work is permitted in an Owner-occupied space, execute the work as expeditiously as possible to minimize the time work is conducted in the Owner's space.
- A. Effectively protect and shield all fixtures, furnishings, equipment, supplies and other items.
  - B. Have a competent cleaning crew working concurrently with the construction crew and immediately after completion of the construction work too immediately and thoroughly clean up the area so there is no evidence of the work having been done.
  - C. Coordinate activities so as to maintain the lowest possible impact of loud or repetitive noises outside of the work area. Provide one week advance warning of specific loud activities to the project manager so as to enable communication to adjoining staff and their patients. Cooperate with Owner requests to temporarily stop noisy activity due to concerns around the patient population.
- 1.8 UTILITIES AND SERVICES: Do not intentionally nor accidentally interrupt utilities and services serving Owner-occupied spaces without the Owner's prior written permission. Provide equivalent temporary services as needed to maintain the Owner's occupancy and normal use of the space.
- A. See Section 01500 for additional information and requirements including minimum advance notice requirement.
- 1.9 WORKER IDENTIFICATION: Each General or Prime Contractor and all subcontractors shall obtain identification badges from the Security Department for each of his workers. All badges must be returned to the project manager before final payment is approved.
- A. All non-employees are required to review the "Employee Safety and Health Handbook" and complete the test. The completed test is maintained by the sponsoring Department. Once the test has been completed, a request for a picture badge may be supplied to the non-employee who will present it to the officer at the Security Command Center.
- 1.10 WORKER CONDUCT AND APPEARANCE - WORK RULES: The conduct and appearance of each worker at the jobsite is of paramount importance. The Owner reserves the right to require any worker to be reassigned to work outside the Owner's property.
- A. Privacy: Conduct all work of the Contract with the maximum effort to maintain the privacy of the Owner's operations, staff and patients. Do not permit workers to peer into other areas of the building visible from the work area. Invasion of privacy is a major infraction of the work rules.

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- B. General Conduct and Demeanor: All construction workers shall treat all other construction workers, Owner's staff, patients and the public professionally with respect and courtesy.
  - C. Physical Appearance: Require each worker to dress appropriately in a clean, neat and professional manner.
  - D. Radios and Television: The use of entertainment devices including personal devices with headphones or earphones is strictly prohibited at all times. Control the volume of communication radios and loudspeakers to avoid creating a nuisance.
  - E. Smoking: The Smoking Policy of the Campus is to be followed at all times, in locations including but not limited to, inside any building, inside the work area and adjacent to the campus.
  - F. Language: The use of foul language is strictly prohibited.
  - G. Loud Conduct: Screaming, yelling and unnecessary loud conduct is strictly prohibited.
  - H. Physical Actions: Running, horseplay, fighting and other unprofessional conduct is strictly prohibited. Fighting is a major infraction of the work rules.
  - I. Stealing: Stealing of any materials, objects, furnishings, equipment, fixtures, supplies, clothing, or other items is prohibited and a major infraction.
  - J. Sexual Harassment: All forms of physical and verbal sexual harassment including, without limitation: touching; whistling; sexually explicit stories, jokes, drawings, photos, and representations; exhibitionism; and all other sexually oriented offensive behavior is strictly prohibited.
  - K. Warnings and Dismissal: For minor infractions of the rules, the Owner may issue a warning. Only one warning will be allowed per worker, and the second infraction shall result in immediate dismissal of the worker from the Owner's property. For major infractions such as invasion of privacy, the worker shall be dismissed immediately without warning and possibly subject to criminal prosecution.
  - L. Notification of Workers: Clearly notify and educate each worker about these Work Rules and the requirements for worker conduct and appearance.
- 1.11 SEPARATION OF WORK AREA FROM OWNER-OCCUPIED AREAS: Effectively isolate work areas from Owner-occupied areas to control dust, noise, vision, fire and ambient conditions.
- A. Fire-Rated Separations: Except where existing construction is approved by the Owner as a separation, provide temporary 1-hour fire-rated metal stud and drywall partitions.

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- B. Acoustic Performance: Provide separation which provides an STC performance of 50 or better.
  - C. Ambient Conditions: Insulate partitions to the equivalent of R=13 where there is the potential for significantly different ambient conditions on both sides of the partitions.
  - D. Appearance of Partitions: Provide a fully-finished appearance on all partitions facing the Owner-occupied space. Provide prefinished vinyl wallcovering-clad drywall.
  - E. Dust Control: Make separation partitions effectively stop the passage of dust. Caulk and seal the perimeter of the partitions and all joints between prefinished drywall panels.
- 1.12 DUST CONTROL: Take every possible precaution to control dust. Review carefully the requirements of the "Infection Control Risk Assessment" and post a copy of the summary sheet clearly at the entrance to the worksite. Educate all contractor forces on the importance to patient and staff safety of maintaining the requirements set forth in the document. This document outlines specific dust control measures, which supersede the following, but which are provided to help illustrate the intent of the measures:
- A. Use vacuum-attached sanders and saws when working in Owner-occupied areas.
  - B. Ventilate work areas directly to the exterior at locations approved by the Owner.
  - C. Use high-efficiency HEPA filters for all ventilation which affects Owner-occupied spaces.
    - 1. HEPA Filter Performance Requirements: Provide fan-powered filtration systems with CFM capacity to filter the entire work area volume at least six (6) times per hour. Provide more than one HEPA filter unit if necessary to meet this performance requirement. Provide HEPA filters which contain activated carbon to remove chemical vapors and odors. Provide HEPA filters which are at least 99.97 percent (99.97%) efficient and which remove particulates down to 0.3 microns in size.
- 1.13 MATERIAL SELECTION: Select materials, products and procedures which do not result in objectionable conditions.
- A. Do not release odors, fumes, particles, fibers, or contamination.
  - B. Use water-based materials instead of solvent-based materials to the greatest extent possible. Use solvent-based and objectionable materials only when approved by the Owner in writing and observe the Owner's conditions of use which may include special restriction of hours of use.
- 1.14 HOURS OF WORK: Perform work only between the following hours, unless otherwise identified in the Agreement, or as formally agreed in advance with the Owner's representative:
- A. Monday through Friday: 8:00 A.M. to 4:30 P.M.

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- B. Overtime: If permitted work hours include hours considered "overtime" or "premium time", the overtime or premium time shall be included in the original Contract Amount
  - C. Owner's Overtime: If to satisfy the Contractor's scheduling needs, the Owner's inspection, supervisory, maintenance or other personnel are required to be at the jobsite at other than their normal times, the Owner shall compensate his employees, including Contract employees, with overtime or premium time as required by the various employment agreements, and the cost of the Owner's employees shall be deducted from the Contract amount due to the Contractor.
- 1.15 CIRCULATION ROUTES AND CONSTRUCTION TRAFFIC: Prior to commencement of the work, obtain from the Owner a written or graphic construction traffic circulation plan including the following information:
- A. Designated Parking Areas:
    - 1. Park in areas pre-approved by Owner only.
    - 2. Deliveries: Deliver materials and supplies to a Staff or side door. Coordinate, schedule, manage and conduct the work to minimize the number of deliveries made. Keep materials, supplies, tools and equipment at the jobsite to the greatest extent possible.
    - 3. Exceptions: Coordinate exceptions and deviations from these rules with the Project Manager and Security Department.
  - B. Corridors and Stairs: Use only corridors designated by the Owner.
  - C. Elevators: See Section 01500 and/or the Infection Control Risk Assessment.
  - D. Egress: Maintain legal and safe egress from construction areas. Do not block building egress. Where work includes or is adjacent to a normal building egress path, provide one (1) hour fire-rated temporary partitions to enclose the egress path and provide Code-complying lighting including emergency lighting and exit signs.
  - E. Site security: Ensure that all entrances to the work site are keyed and accessible to allow entrance by Baystate Health Security Personnel at any time. The contractor is responsible for maintaining a secure site that discourages access by personnel not associated with the work.
  - F. Dumpster: The building dumpster is not to be used for construction debris. A construction dumpster can be located on site if approved by Owner in advance.
- 1.17 WORK LIMITS: Work limits indicated on the Contract Documents are diagrammatic and are intended to identify the primary work areas. Work outside the work limits may be required to comply with the Contract requirements. All work, both inside and outside the work limits, shall comply with the specified Continuous

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Occupancy Requirements.

- 1.18 ROOFING: Restrict traffic and work over roofs. Where traffic is necessary, provide effective temporary walkways with rails to control traffic and to effectively protect the roof assembly.
- 1.19 SIGNS: See Section 01500.
- 1.20 SAFETY GEAR: The contractor shall maintain on site and within easy access, adequate safety gear (hardhats, safety glasses, etc.) for use by appropriate personnel.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

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**SECTION 01200 - PROJECT MEETINGS**

PART 1 GENERAL

- 1.1 APPLICABILITY: This Sections applies to all work of the Contract.
- 1.2 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- 1.3 SUMMARY OF WORK: This Section specifies administrative and procedural requirements for project meetings including, but not limited to, the following:
- A. Preconstruction Conferences
  - B. Progress Meetings
- 1.4 PRECONSTRUCTION CONFERENCE: Schedule a Preconstruction Conference before starting construction, at a time convenient to the Owner and the Architect, but no later than fifteen (15) days after execution of the Agreement. Hold the conference at the project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
- A. Attendees: Authorized representatives of the Owner, Architect, and their consultants; the Contractor and Superintendent; major Subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the project and authorized to conclude matters relating to the work.
  - B. Agenda: Discuss items of significance that could affect progress including the following:
    - 1. Tentative Construction Schedule
    - 2. Critical Work Sequencing and Phasing (if required)
    - 3. Designation of Responsible Personnel
    - 4. Procedures for Processing Field Decisions and Change Orders
    - 5. Procedures for Processing Applications for Payment
    - 6. Distribution of Contract Documents
    - 7. Submittal of Shop Drawings, Product Data and Samples
    - 8. Preparation of Record Documents
    - 9. Use of the Premises
    - 10. Parking Availability
    - 11. Office, Work and Storage Areas
    - 12. Equipment Deliveries and Priorities
    - 13. Safety Procedures
    - 14. First Aid

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15. Security
16. Housekeeping
17. Working Hours
18. Infection Control

1.5 PROGRESS MEETINGS: Conduct progress meetings at the project site at scheduled intervals. Notify the Owner and the Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.

- A. Attendees: In addition to representatives of the Owner, the Architect and Contractor, each Subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the project and authorized to conclude matters relating to the work.
- B. Agenda: Review and correct or approve Minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the project.
- C. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
- D. Review the present and future needs of each entity present, including the following:
  1. Interface Requirements
  2. Time
  3. Sequences
  4. Status of Submittals
  5. Deliveries
  6. Off-Site Fabrication Problems
  7. Access
  8. Site Utilization
  9. Temporary Facilities and Services
  10. Hours of Work
  11. Hazards and Risks
  12. Housekeeping
  13. Quality and Work Standards
  14. Change Orders
  15. Documentation of Information for Payment Requests
- E. Reporting: No later than three (3) days after each meeting, the Contractor or Project Manager will distribute Minutes of the Meeting to each party present and to parties who should have been present. The report will include a brief summary, in narrative form, of progress since the previous

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- meeting and report.
- F. Schedule Updating: Revise the Contractor's Construction Schedule after each Progress Meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 013100

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## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This section includes administrative and procedural requirements for submittals required for performance of the work.
  - 1. Without limitation, types of submittals include the following:
    - a. Contractor's Construction Schedule
    - b. Submittal Schedule
    - c. Daily Construction Reports
    - d. Shop Drawings
    - e. Product Data
    - f. Samples
    - g. Quality Assurance Submittals

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

#### 1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule 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 modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

#### 1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. 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. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

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- a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architects receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow two (2) weeks 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 two (2) weeks for review of each resubmittal.
- C. Identification and Information: Place a permanent label or title block on each submittal for identification.
1. Indicate name of the entity that prepared each submittal on label or title block.
  2. Provide a space approximately 4" x 5" on label or beside title block on Shop Drawings to record Contractor's review and approval markings and action taken by Architect
  3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Name of Subcontractor.
    - f. Name of Supplier.
    - g. Name of Manufacturer.
  
    - h. Number and title of appropriate Specification Section.
    - i. Drawing number and detail references, as appropriate.
- D. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using transmittal form, AIA Document G810. Architect will only accept submittals directly from the Contractor.
1. On the transmittal, record relevant information and requests for data.
  2. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations.
  3. Include Contractor's certification that information complies with Contract Document requirements.
- 1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE
- A. Bar-Chart Schedule: Prepare a fully-developed, horizontal bar-chart-type, Contractor's Construction Schedule. Submit within thirty (30) days after the date established for "Commencement of Work".
1. Provide a separate time bar for each significant construction activity
  2. Provide a continuous vertical line to identify the first working day of each week.

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3. Use the same breakdown of units of the work as indicated in the "Schedule of Values". Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of Subcontracts, Submittal Schedule, Progress Reports, Payment Requests and other Schedules.
  4. Within each time bar, indicate estimated completion percentage in ten percent (10%) increments. As work progresses, place a contrasting mark in each bar to indicate Actual Completion.
  5. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
  6. Secure time commitments for performing critical elements of the work from parties involved.
  7. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work.
  8. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the work.
  9. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the procedures necessary for certification of Substantial Completion.
- B. Phasing: On the schedule, show how requirements for phased completion to permit work by separate Contractors and partial occupancy by the Owner affects the sequence of work.
- C. Work Stages: Indicate important stages of construction for each major portion of the work, including submittal review, testing and installation.
- D. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.
- E. Cost Correlation: At the head of the schedule, provide a cost correlation line indicating planned and actual costs. On the line, show dollar volume of work performed as of the dates used for preparation of payment requests.
- F. Distribution: Following response to the initial submittal, print and distribute copies to Soldier's Home Holyoke, its representatives, Subcontractors, and other parties required to comply with scheduled dates. Post copies in the project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.
- G. Schedule Updating: Revise the schedule after each meeting, event or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.
- 1.6 SUBMITTAL SCHEDULE: After development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within ten (10) days of the date required for submittal of the Contractor's Construction Schedule.
- A. Coordinate Submittal Schedule with the list of Subcontracts, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule
  - B. Prepare the Schedule in chronological order. Provide the following information:

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1. Scheduled Date for the First Submittal
  2. Related Section Number
  3. Submittal Category (Shop Drawings, Product Data or Samples)
  4. Name of the Subcontractor
  5. Description of the Part of the Work Covered
  6. Scheduled Date for Resubmittal
  7. Scheduled Date for the Architect's Final Release or Approval.
- C. Distribution: Following response to the initial submittal, print and distribute copies to Soldier's Home Holyoke, its representatives, Subcontractors and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.
- D. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.
- 1.7 DAILY CONSTRUCTION REPORTS: Prepare a daily construction report recording the following information concerning events at the site, and submit duplicate copies to Soldier's Home Holyoke at weekly intervals.
- A. List of Subcontractors at the Site
  - B. Count of Personnel at the Site
  - C. High and Low Temperatures, General Weather Conditions for Work which is Not Entirely within Conditioned Space
  - D. Accidents and Unusual Events
  - E. Meetings and Significant Decisions
  - F. Stoppages, Delays, Shortages and Losses
  - G. Emergency Procedures
  - H. Orders and Request of Governing Authorities
  - I. Change Orders Received, Implemented
  - J. Services Connected, Disconnected
  - K. Equipment or System Tests and Startups
  - L. Partial Completions, Occupancies
  - M. Substantial Completion Authorized

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- N. Other Important Information
- 1.8 ACCIDENT REPORTS: Promptly submit copies to Soldier's Home Holyoke of all accident and worker's compensation reports filed with the Commonwealth regarding accidents related to this project. In coordination with the Soldier's Home Holyoke Project Manager, complete a Soldier's Home Holyoke accident report.
- 1.9 SHOP DRAWINGS: Submit newly-prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the project is not a Shop Drawing.
- A. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
1. Dimensions, including field-verified dimensions
  2. Identification of products and materials included by Sheet and Detail number
  3. Compliance with specified standards
  4. Notation of coordination requirements
- B. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2" by 11", but no larger than 36" by 48".
- C. Submittal Quantity: Submit at least five (5) blue- or black-line prints for review. Each reviewer will retain one (1) print.
1. One of the prints returned shall be marked up and maintained as a "Record Document" by the Contractor.
- D. Restriction: Do not use Shop Drawings without an appropriate final stamp indicating action taken.
- 1.10 Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Product data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
- A. Mark each copy to show applicable choices and options. Where printed product data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
1. Manufacturer's Printed Recommendations
  2. Compliance with Trade Association Standards
  3. Compliance with Recognized Testing Agency Standards
  4. Application of Testing Agency Labels and Seals
  5. Notation of Dimensions Verified by Field Measurement
  6. Notation of Coordination Requirements
- B. Do not submit product data until compliance with requirements of the Contract Documents has been confirmed.

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- C. Preliminary Submittal: Submit a preliminary single copy of product data where selection of options is required.
  - D. If submitting paper submittal – submit at least five (5) copies of each required submittal. Each reviewer will retain one (1) copy and will return the other marked with action taken and corrections or modifications required.
  - E. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
  - F. Distribution: Furnish copies of final submittal to installers, Subcontractors, suppliers, manufacturers, fabricators and others required for performance of construction activities. Show distribution on transmittal forms.
  - G. Restrictions: Do not proceed with installation until a copy of product data is in the installer's possession. Do not permit use of unmarked copies of product data in connection with construction.
- 1.11 SAMPLES: Submit full-size, fully fabricated samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.
- A. Mount or display samples in the manner to facilitate review of qualities indicated. Prepare samples to match the Architect's sample.
  - B. Include the following on each sample:
    - 1. Specification Section Number and Reference
    - 2. Generic Description of Sample.
    - 3. Product Name and Name of Manufacturer.
    - 4. Sample source.
    - 5. Number and title of applicable Specification Section.
    - 6. Availability and Delivery Time
    - 7. Intended Use Location in the Project
  - C. Submit samples for review of size, kind, color, pattern, and texture. Submit samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - 1. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, provide at least two (2) samples to show the complete and extreme limits of color and appearance variation in the work. To be acceptable, work shall fall within the approved sample range. Work which is outside of the approved sample range is non-conforming, defective and not acceptable.
  - D. Refer to individual Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.

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- E. Refer to individual Specification Sections for samples to be returned to the Contractor for incorporation in the work. Such samples must be undamaged at time of use.
  - F. On the transmittal, indicate special requests regarding disposition of sample submittals.
    - 1. Samples not incorporated into the work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Final Completion.
  - G. Preliminary Submittals: Submit a full set of choices where samples are submitted for selection of color, pattern, texture, or similar characteristics from the range of available choices.
  - H. Sample Set Quantities: Except for samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit three (3) sets. One (1) set will be returned marked with the action taken.
  - I. Samples Used as a Basis for Comparison: Maintain sets of samples, as returned, at the project site, for quality comparisons throughout the course of construction.
  - J. Distribution of Samples: Prepare and distribute additional sets to Subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the work. Show distribution on transmittal forms.
  - K. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the project standard. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.
- 1.12 QUALITY ASSURANCE SUBMITTALS: Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- A. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
  - B. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
- 1.13 CONTRACTOR ACTION: Before submitting any submittal to the Architect or Baystate Medical Center, the Contractor shall thoroughly review, verify and coordinate the submittal and ensure that the submittal is complete and correct.
- A. Action Stamp: The Contractor shall stamp each submittal with the Contractor's submittal stamp and sign and date same. Submittals received without the Contractor's stamp and notation are not acceptable and may be returned without action. The Contractor shall stamp and note each submittal to indicate at least the following:
    - 1. The Contractor has reviewed and checked the submittal.
    - 2. The Contractor believes the submittal conforms to the Contract requirements.
    - 3. The submittal is coordinated with adjacent and related work.

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- 1.14 REVIEWER ACTION: Except for submittals for the record or information, where action and return is required, the reviewer will review each submittal, mark to indicate action taken, and return within ten (10) business days, except in cases where submittals are incomplete.
- A. Compliance with specified characteristics is the Contractor's responsibility and review or approval does not change the requirements of the Contract Documents, unless a formal request for substitution or change in the Contract Documents was clearly presented with the submittal.
  - B. Action Stamp: The reviewer will stamp each submittal with a uniform, action stamp and will mark the stamp appropriately to indicate the action taken.
    - 1. Do not use, or allow others to use, submittals marked "Not Approved", "Revise and Resubmit", "Rejected" or similar disapproval wording at the project site or elsewhere where work is in progress.
  - C. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the reviewer may return the submittal marked "Action Not Required" or "No Action Taken".
  - D. Unsolicited Submittals: The reviewer may return unsolicited submittals to the sender without action.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 013300

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**SECTION 01600**

**MATERIALS AND EQUIPMENT**

**PART 1 GENERAL**

- 1.1 **APPLICABILITY:** This Section applies to all work of the Contract.
- 1.2 **RELATED DOCUMENTS:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- 1.3 **SUMMARY OF WORK:** This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the project.
- 1.4 **QUALITY ASSURANCE:**
  - A. **Source Limitations:** To the fullest extent possible, provide products of the same kind from a single source.
  - B. **Compatibility of Options:** When the Contractor is given the option of selecting between two (2) or more products for use on the project; the product selected shall be compatible with products previously selected, even if previously selected products were also options.
    1. The Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of separate Subcontractors.
  - C. **Nameplates:** Except for required labels and operating data, do not attach or imprint manufacturers or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.
    1. **Labels:** Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
  - D. **Equipment Nameplates:** Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
    1. Name of Product and Manufacturer
    2. Model and Serial Number
    3. Capacity

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4. Speed
5. Ratings

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

- A. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
- B. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- C. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
- D. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- E. Store products at the site in a manner that will facilitate inspection.
- F. Store heavy materials supported directly on the ground or in a manner that will not endanger the supporting construction.
- G. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

1.6 PRODUCT SELECTION: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation, and recently manufactured.

- A. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
- B. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- C. Product Selection Procedures: The Contract Documents and governing regulations govern product selection, not previous project experience. Procedures governing product selection include the following:
  1. Proprietary Specification Requirements - One Product Specified: Where Specifications

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name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.

2. Proprietary Specification Requirements - More Than One Product Specified: Where Specifications name two (2) or more products or manufacturers, provide one (1) of the products indicated. No substitutions will be permitted.
3. "Or Equal": Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal", comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
  - a. Lists of Manufacturers: List of manufacturers included with descriptive specifications are for convenience only and do not supercede the specification requirements. Not all manufacturers listed may be able to meet the specifications. The listing of a manufacturer with a descriptive specification shall not mean the manufacturer is acceptable, unless the specification requirements are fully met.
5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
6. Visual Matching: Where Specifications require matching an established sample or existing materials, the Owner's decision will be final on whether a proposed product matches satisfactorily.
7. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that comply with other specified requirements and provide a broad range of visual options. The Owner will select the color, pattern, and texture. If the visual range available is limited, unusual, or dissatisfactory to the Owner, the Contractor shall provide another manufacturer or product line with visual options acceptable to the Owner at no change in Contract Amount.

- 1.7 INSTALLATION OF PRODUCTS: Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately

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located and aligned with other work.

- A. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 016000

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## SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 GENERAL

#### 1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for recycling and disposing of construction waste.

#### 1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, and/or installation of new materials as part of remodeling, renovation, or repair operations. Construction waste includes packaging.
  - 1. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations prior to renovations or remodeling.
- B. Disposal: Removal off-site of construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- C. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- D. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- E. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: Develop a Waste Management Plan that states as its objective to attain at project completion a recycling rate of 75 percent by weight of the total waste generated by the Work.
- B. Recycle Requirements: Maximize recycling of non-hazardous construction waste including the following materials:
  - 1. Site-clearing waste.
  - 2. Masonry and CMU.
  - 3. Lumber, wood sheet materials, and wood trim.
  - 4. Metals.
  - 5. Roofing.

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6. Insulation.
7. Glass.
8. Plastics.
9. Gypsum board.
10. Acoustical ceiling panels.
11. Carpet and pad.
12. Piping.
13. Wire and cable.
14. Electrical conduit.
15. Packaging: 100 percent of the following uncontaminated packaging materials: Paper, cardboard, boxes, plastic sheet and film, polystyrene packaging, wood crates, plastic pails.

#### 1.5 SUBMITTALS

- A. Facility Permitting Information: For landfill and/or incinerator facilities, provide a copy of the facility's current solid waste management facility permit in accordance with 310 CMR 19.000.
- B. Record Keeping for Recycling and Landfill and/or Incinerator Disposal; Records of Donations indicating receipt and acceptance of salvageable waste donated; Records of Sales indicating receipt and acceptance of salvageable waste sold. Documentation to be submitted by the Construction Manager shall include the following:
  1. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.
  2. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.

#### 1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction, including but not limited to, Massachusetts solid waste regulations contained in 310 CMR 16.00 and 310 CMR 19.000.

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

#### PART 3 - EXECUTION

##### 3.1 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Receivers and Processors: Available recycling receivers and processors include, but are not limited to, those listed in the Massachusetts Recycling Directory, available from the Massachusetts State Bookstore (617-727-2834) located in the Massachusetts Statehouse, for recycling operations within the Commonwealth of Massachusetts.

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- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical. For waste, which cannot be separated at Project site, co-mingle only with waste, which is to be separated later at a recycling facility. The Construction Manager will address contamination of recycling containers with trash or other contaminants and who will be solely responsible for payment of all fines and penalties.
1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin. Inspect containers and bins for contamination and remove contaminated materials if found.
  2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
  4. Store components off the ground and protect from the weather.
  5. Remove recyclable waste off User Agency's property and transport to recycling receiver or processor.

### 3.2 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
  2. Polystyrene Packaging: Separate and bag materials.
  3. Pallets: To the extent feasible, require shippers using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
  4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Concrete: Deposit all debris in designated containers to be transported to approved aggregate recycling facility to be crushed and screened for use as satisfactory soil for fill or sub-base.
- C. Masonry: Deposit all masonry debris in designated containers to be transported to approved aggregate recycling facility to be crushed and screened for use as satisfactory soil for general fill or satisfactory soil for fill or sub-base. Clean and stack undamaged whole masonry units on wood pallets.
- D. Wood Materials:
1. Clean Cut-Offs of Lumber: Deposit into designated clean wood container to be transported to designated recycling facility for use as mulch or bio-fuel.
  2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- E. Metals: Separate metals by material type if practical. Stack salvageable structural steel members according to size, type of member, and length.
- F. Glass: Deposit glass debris into designated containers to be transported to approved glass-recycling facility.
- G. Plastics: Deposit plastic containers and debris into designated containers to be transported to approved plastic recycling facility.

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- H. Clean Gypsum Board: Deposit scraps of clean gypsum board into designated container protected from weather and transport to appropriate gypsum-recycling facility to be processed into new gypsum board.
- I. Acoustic Ceiling Panels: Deposit pulp able mineral fiber panels into designated container protected from weather and prepare for transport, as directed by manufacturer, to appropriate recycling facility to be processed into new acoustic ceiling panels. Separate suspension system, trim, and other metals from panels and sort with other metals.
- J. Carpet: Deposit carpet into designated container protected from weather and prepare for transport, as directed by manufacturer, to appropriate recycling facility to be processed into new products.

### 3.3 DISPOSAL OF WASTE

- A. Except for items or materials to be recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. For solid waste disposal facilities located in the Commonwealth of Massachusetts, dispose of materials only in facilities which currently comply with applicable state regulations, including requirements of 310 CMR 16.00 {Site Assignment for Solid Waste Facilities} and 310 CMR 19.000 {Solid Waste Management}, and local bylaws.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION - 017419

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## SECTION 017700 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection Procedures
  - 2. Project Record Document Submittal
  - 3. Operation and Maintenance Manual Submittal
  - 4. Submittal of Warranties
  - 5. Final Cleaning
- B. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply for this Section.

#### 1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List exceptions, if any, in the request – exceptions may result in rejection of the request for inspection.
  - 1. Submit a Request for Payment related to the portion claimed Substantially Complete. To be claimed as "Substantially Complete", the work shall be at least ninety-nine percent (99%) complete as indicated on approved payment requests. No more than one percent (1%) of the work may be "Punch List Items".
  - 2. Include supporting documentation for completion as indicated in this Contract Documents and a statement showing an accounting of changes in the Contract Sum.
  - 3. If one hundred percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
  - 4. Advise Owner of pending insurance changeover requirements.
  - 5. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 6. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 7. Submit Record Drawings and maintenance manuals
  - 8. Submit project photographs, if required under the Contract
  - 9. Deliver tools, spare parts, extra stock and similar items
  - 10. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
  - 11. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel.

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12. Discontinue and remove temporary facilities from site, along with mock-ups, construction tools and similar elements.
  13. Complete final cleanup requirements, including touchup painting.
  14. Touch-up and otherwise repair and restore marred, exposed finishes.
- B. Inspection: On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.
- 1.3 FINAL ACCEPTANCE:
- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following:
1. Submit a final payment request with releases and supporting documentation not previously submitted and accepted.
  2. Provide insurance certificates for products and completed operations where required.
  3. Submit an updated final statement, accounting for the final additional changes to the Contract Sum.
  4. Submit a certified copy of the official "Punch List". The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by Baystate Medical Center or its authorized representative.
  5. If utilities were metered, submit final meter readings for utilities and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the work
  6. Submit Consent of Surety to Final Payment
  7. Submit a final liquidated damages settlement statement, if liquidated damages are incorporated into the Contract.
  8. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

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PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance Manuals
2. Record Documents
3. Spare Parts and Tools
4. Lubricants
5. Identification Systems
6. Control Sequences
7. Hazards
8. Cleaning
9. Warranties and Bonds
10. Maintenance Agreements and Similar Continuing Commitments.

- 3.2 FINAL CLEANING: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, hospital building cleaning and maintenance program. Comply with manufacturer's instructions.

- A. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

1. Remove labels that are not permanent labels
2. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
3. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances.
  - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates
4. Restore reflective surfaces to their original condition
5. Leave concrete floors broom clean
6. Vacuum carpeted surfaces
7. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances.
8. Clean plumbing fixtures to a sanitary conditions
9. Clean light fixtures and lamps
10. Clean the construction area of rubbish, litter and other foreign substances.

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11. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  12. Leave Project clean and ready for occupancy.
- B. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

END OF SECTION 017700

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## SECTION 099123 - INTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on interior substrates.
  - 1. Gypsum board.
  - 2. Plaster.

#### 1.2 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples: For each type of paint system and in each color and gloss of topcoat.
- C. Product List: For each product indicated. Include printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
- D. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

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#### 1.4 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Architect will select one surface within the project scope to represent surfaces and conditions for application of each paint system specified in Part 3.
    - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft.
    - b. Other Items: Architect will designate items or areas required.
  - 2. Final approval of color selections will be based on mockups.
    - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

#### PART 2 - PRODUCTS

##### 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements of these specifications, provide one of the products listed:
  - 1. Benjamin Moore
  - 2. FW Devoe & Reynolds
  - 3. Martin-Senour
  - 4. PPG, Pittsburgh Paints
  - 5. Pratt and Lambert
  - 6. Tnemec Company

##### 2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
  - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

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1. Flat Paints and Coatings: VOC content of not more than 50 g/L.
2. Non-flat Paints and Coatings: VOC content of not more than 150 g/L.
3. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.

D. Colors: Match Architect's samples.

## 2.3 PRIMERS/SEALERS

A. Primer Sealer, Latex, Interior: **MPI #50**

1. VOC Content: E Range of E2 minimum
2. Environmental Performance Rating: EPR 2 minimum

## 2.4 WATER-BASED PAINTS

A. Latex, Interior, (Gloss Level to match existing conditions)

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  1. Gypsum Board: 12 percent.
  2. Plaster: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

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1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
- E. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 INTERIOR PAINTING SCHEDULE

- A. Gypsum Board or Plaster Substrates:
  1. Institutional Low-Odor/VOC Latex System:
    - a. Prime Coat: Interior latex primer/sealer.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC interior latex.

END OF SECTION 099123

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SECTION 260010 - GENERAL CONDITIONS FOR ELECTRICAL TRADES

PART 1 - GENERAL

1.1 TIME, MANNER, AND REQUIREMENTS FOR SUBMITTING SUB-BIDS

- A. Sub-bids shall be submitted in accordance with the provisions of Massachusetts General Laws (Ter Ed) Chapter 149, Sections 44A to 441, inclusive, as amended. The time and place for submission of sub-bids shall be as set forth in the ADVERTISEMENT FOR BIDS.
- B. Each sub-bid filed with the Awarding Authority must be accomplished by BID BOND, or CASH, or CERTIFIED CHECK, or TREASURER'S CHECK or CASHIER'S CHECK, issued by a responsible bank or trust company, payable to the State of MASSACHUSETTS, in the amount of five-percent (5%) of the bid amount. A bid accompanied by any other form of bid deposit will be rejected.
- C. Each sub-bid, submitted for the work of this SECTION, shall be on a form furnished by the Awarding Authority, as required by Section 44F of Chapter 149, as amended.
- D. Work to be done under this SECTION is shown on Drawings numbered: Cover Sheet.

E001	Electrical General Notes, Abbreviations and Symbol List	None
E002	Main Building Sub-Basement Floor Fire Alarm Plan	3/32"=1'-0"
E003	Main and North Building Ground Floor Fire Alarm Plan	3/32"=1'-0"
E004	Main and North Building First Floor Fire Alarm Plan	3/32"=1'-0"
E005	Main and North Building Second Floor Fire Alarm Plan	3/32"=1'-0"
E006	Main and North Building Third Floor Fire Alarm Plan	3/32"=1'-0"
E007	Main Building Fourth Floor Fire Alarm Plan	3/32"=1'-0"
E008	Main Building Fifth Floor Fire Alarm Plan	3/32"=1'-0"
E009	Dormitory Fire Alarm Plans	3/32"=1'-0"

- E. Specification Sections in Divisions 26 and 28 that are part of the Electrical Sub-Bid include:

260010	General Conditions for Electrical Trades
260500	Common Work Results for Electrical
260519	Low-Voltage Electrical Power Conductors and Cables
260526	Grounding and Bonding for Electrical Systems
260529	Hangers and Supports for Electrical Systems
260533	Raceways and Boxes for Electrical Systems
260553	Identification for Electrical Systems
262726	Wiring Devices
280010	Electronic Safety and Security Trades Reference to General Conditions
280513	Conductors and Cables for Electronic Safety and Security
280544	Sleeves and Sleeve Seals for Electronic Safety and Security Pathways and Cabling
283111	Digital, Addressable Fire-Alarm System

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1.2 GENERAL PROVISIONS

- A. PART A and DIVISION 1 of PART B, as listed in the TABLE OF CONTENTS, are hereby made part of this SECTION by reference thereto.

1.3 SCOPE OF WORK

- A. The work of this electrical contract includes, but not limited to Conduit, Wiring, Lighting, Power, Fire Alarm and Electrical Equipment as shown on the drawings and included in the specifications.

1.4 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

1.5 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. For any conflict between this Section and Division 01, carry the most stringent and highest cost.

1.6 SUMMARY

- A. This Section includes the following when associated with Divisions 21, 22, and 23 work:

1. Permits and fees, work under other contracts.
2. Work restrictions.
3. Specification formats and conventions.
4. Coordination.
5. Conflicting requirements.
6. Quality assurance and control.
7. Coordination drawings.
8. Product delivery, storage, and handling.
9. Product selection procedures.
10. Product interoperability requirements.
11. General execution of project scope of work.
12. Demonstration and training.
13. Minimum commissioning responsibilities.

- B. Related Sections include the following:

1. Division 01 Sections.

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1.7 PERMITS AND FEES

- A. Give all necessary notices, obtain all permits; pay all government and state sales taxes and fees where applicable, and other costs, including utility connections or extensions in connection with the Project scope of work. File all necessary drawings, prepare all documents and obtain all necessary approvals of all governmental and state departments having jurisdiction, obtain all required certificates of inspections for Project scope of work and deliver a copy to the Architect/Engineer before request for acceptance and final payment for the Project scope of work.

1.8 WORK RESTRICTIONS

- A. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services:
  - 1. Notify Construction Manager or Owner not less than 14 days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Construction Manager's or Owner's written permission.

1.9 COORDINATION

- A. Coordination: Each Contractor shall coordinate its construction operations with those of other Contractors and entities to ensure efficient and orderly installation of each part of the Work. Each Contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
- B. Drawings are diagrammatic, the Contractor shall relocate equipment, piping and ductwork, etc., a reasonable distance for coordination. A reasonable distance is considered to be 12 feet at no cost to the project or Owner.
- C. Contractor shall coordinate all final specific utility requirements.

1.10 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards or directives is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect/Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

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1.11 QUALITY ASSURANCE AND CONTROL

- A. General: Qualifications paragraphs in this Article establish some of the minimum qualification levels required; Division 01 and individual Specification Sections specify additional requirements.
- B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those required for this Project.
- C. Instructor Qualifications: A factory-authorized service representative, complying with requirements in "Quality Requirements," experienced in operation and maintenance procedures and training.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Associated Services: Cooperate with agencies performing required commissioning, tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Delivery of samples to testing agencies.
  - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - 7. Security and protection for samples and for testing and inspecting equipment at Project site.

1.12 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings in accordance with this Section and individual equipment and distribution sections, to facilitate integration of products and materials fabricated or installed by more than one entity. Maintain maximum headroom, where space conditions appear inadequate to maintain proposed ceiling heights or code clearances, notify Architect/Engineer with proposed solutions.
  - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts, but no less than 1/4" equals 1'-0". Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.

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- b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
- c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
- d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
- e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
- f. Indicate required installation sequences.
- g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Process:

1. Particular emphasis is placed on timely installation of major apparatus and furnishing other Contractors, especially the General Contractor or Construction Manager, with information as to openings, chases, sleeves, bases, inserts, equipment locations, panels, access doors, etc., required by other trades.
2. In general, ductwork, heating piping, sprinkler piping and drainage lines take precedence over water, gas and electrical conduits. The Engineer regarding the arrangement of Work, which cannot be agreed upon by the Contractors, will make final decisions.
3. Where the Work of the Contractor will be installed in close proximity to or will interfere with Work of other trades, assist in working out space conditions to make a satisfactory adjustment.
4. If Work is installed before coordinating with other Divisions or so as to cause interference with Work of other Sections, the Contractor causing the interference will make necessary changes to correct the condition without extra charge to the Owner.
5. The Construction Manager/General Contractor shall coordinate the coordination process between the trades. Each trade shall incorporate their systems electronically using a different color code. Establish a meeting schedule where the Architect/Engineer can be present, including initiation of a kickoff meeting to establish the process with all parties, Contractor Coordination Meetings, and Architect/Engineer/Contractor Coordination Review Meetings. Regular Contractor Coordination Meetings of all Contractors involved shall be held to resolve all conflicts, assure accessibility, coordinate sequences and make adjustment to the layout to achieve the Architectural/Engineering intent of spaces, ceiling heights, accessibility, and to maximize headroom clearances in preparation for the Architect/Engineer/Contractor Coordination Review Meetings. Forward one (1) preliminary copy to the Architect and Engineer each, one (1) week prior to the Architect/Engineer Review Meeting identifying all unresolved conflicts. Upon resolving any outstanding conflicts (which may take a couple of rounds), drawings shall be completed and all trades shall sign acceptance of the drawings and submit a minimum of six (6) prints of each drawing to the Architect/Engineer for review.

C. Coordination drawing creation is an iterative process. Contractors shall carry multiple (minimum of 3) routings, options and configurations until the Engineer's and Architect's approval is given.

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D. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Project scope of work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
  - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
  - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
  - c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
  - a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
  - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
  - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
  - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire Protection System: Show the following:
  - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Architect/Engineer will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with this Section and the requirements of Section "Submittal Procedures."

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- E. Coordination Digital Data Files: Prepare coordination digital data files in accordance with the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as the original Drawings.
  2. File Preparation Format: DWG, , operating in Microsoft Windows operating system.
  3. File Submittal Format: Submit or post coordination drawing files using Portable Data File (PDF) format.
  4. Architect will furnish Contractor one set of digital data files of the Drawings for use in preparing coordination digital data files.
    - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to the Drawings.
    - b. Contractor shall execute a data licensing agreement in the form of AIA Document C106.

1.13 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions and generally accepted construction practice.
- B. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger Project structure.
  3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  4. Store cementitious products and materials on elevated platforms.
  5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  7. Protect stored products from damage and liquids from freezing.
  8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.14 RECORD DRAWINGS

- A. Record Drawings: Comply with the following:
1. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Initial Submittal: Submit one set of plots from corrected Record CAD Drawings and one set of marked-up Record Prints. Engineer will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Engineer will return plot for organizing into sets, printing, binding, and final submittal.

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- b. Final Submittal: Submit one set of marked-up Record Prints, one set of Record Transparencies, and three copies printed from Record Transparencies. Print each Drawing, whether or not changes and additional information were recorded.
  - c. Final Submittal: Submit three sets of Record CAD Drawing files and one set of Record CAD Drawing plots. Plot and print each Drawing, whether or not changes and additional information were recorded.
- 1) Electronic Media: CD-R.

B. Qualification Data: For training instructor.

#### 1.15 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

- 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
- 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- 4. Where products are accompanied by the term "as selected," Engineer and/or Architect will make selection.
- 5. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- 6. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

- 1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
- 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
- 3. Products: Where specification lists a single manufacturer as a basis with a list of other manufacturers also included, the design is based on the one manufacturer. The Contractor is responsible for verifying prior to submission, that any other manufacturer even though listed complies with dimensional and performance characteristics of the base specified product.
- 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
- 5. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in "Product Substitutions" Article for consideration of an unnamed product or system.

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6. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches the sample. Engineer's and/or Architect's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in "Product Substitutions" Article for proposal of product.

#### 1.16 PRODUCT INTEROPERABILITY REQUIREMENTS

- A. General Interoperability Requirements: Provide products that are fully system interoperable.
  1. BACNet is the preferred interoperability mode for non-IP enabled products.
  2. Lonworks and Modbus compatibility may be considered on a case by case basis.
  3. Provide translators with all products as required to facilitate interoperability.
  4. Coordinate with "Instrumentation and Controls for HVAC" and other building operational systems for specific interoperability requirements.
- B. Communications Standard: Coordinate communications standards requirements with other Sections and Divisions.
  1. RS 485 is the preferred communications standard.
  2. RS 422 will be approved on a case by case basis.
  3. RS 423 will be approved on a case by case basis.
  4. RS 232 should not be utilized unless specifically accepted.
- C. Information Availability: Make all product information, points, variables, setpoints, etc., available for access of building operational systems upon request.
  1. Provide point mapping/addressing instructions.
  2. Provide on-site technicians as required to access information.
- D. Factory Provided Controllers: Provide all information, points, variables, setpoints, etc., indicated and referenced in all documentation, including "Instrumentation and Controls for HVAC." Products shall have full interoperability as indicated in this Section and elsewhere.

#### 1.17 MINIMUM CONTRACTOR'S COMMISSIONING RESPONSIBILITIES

- A. Each Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:
  1. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
  2. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
  3. Attend commissioning team meetings held on a weekly basis.
  4. Integrate and coordinate commissioning process activities with construction schedule.

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5. Review and accept construction checklists provided by the CxA.
6. Complete paper or electronic construction checklists as Work is completed and provide to the Commissioning Authority on a weekly basis.
7. Review and accept commissioning process test procedures provided by the Commissioning Authority.
8. Complete commissioning process test procedures.

B. Refer to related information in other sections for additional requirements.

## PART 2 - PRODUCTS

### 2.1 COORDINATION DRAWINGS

- A. Coordination Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents and actual special restrictions.
  2. Sheet Size: Submit Coordination Drawings on sheets at least 30 by 42 inches.
  3. Submit Shop Drawings in the following format:
    - a. PDF electronic file.
    - b. Six opaque (bond) copies of each submittal. Engineer will return five copies.

### 2.2 TRAINING AND INSTRUCTION PROGRAM

- A. Program Structure: In addition to Division 01 and individual section requirements, develop an instruction program that includes individual training modules for each system and equipment not part of a system.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. Provide instruction for the following modules.
1. Basis of System Design and Operational Requirements
  2. Documentation
  3. Emergencies
  4. Operations
  5. Adjustments
  6. Troubleshooting
  7. Maintenance
  8. Repairs
- C. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

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### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utility and system connections.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Project scope of work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

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- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### 3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  - 4. Maintain minimum headroom clearance as indicated by Architect and/or Construction Manager in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer and/or to allow for proper access.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

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- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

#### 3.4 CUTTING AND PATCHING

- A. See Division 01 for additional requirements. The Contractor shall furnish sketches showing the location and sizes of all openings, chases, etc., required for the installation of Work.
- B. Work under this Division shall include furnishing, locating and setting inserts and/or sleeves required before the floors and walls are built or be responsible for cutting, drilling or chopping where sleeves and inserts were not installed or correctly located. The Contractor shall do all drilling required for the installation of hangers.
- C. Exercise extreme caution when core drilling or punching openings in concrete floor slabs in order to avoid cutting or damaging structural members. No structural members or structural slabs/floors shall be cut without the written acceptance of the Structural Engineer and all such cutting shall be done in a manner directed by him.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

#### 3.5 SCAFFOLDING, RIGGING, HOISTING

- A. The Contractor shall furnish all scaffolding, rigging, hoisting and services necessary for erection and delivery into the premises any equipment and apparatus furnished under this Division. Remove same from premises when no longer required.

#### 3.6 EXCAVATION AND BACKFILLING

- A. It is the responsibility of the Contractor to coordinate sizes, depths, fill and bedding requirements and any other excavation work required under this Division.

#### 3.7 ACCESSIBILITY AND ACCESS PANELS

- A. The Contractor shall be responsible for the sufficiency of the size of shafts and chases, the adequate thickness of partitions, and the adequate clearance in double partitions and hung ceilings for the proper installation of the Work.
- B. Locate all equipment which must be serviced, operated or maintained in fully accessible positions. Access doors shall be furnished for accessibility. Minor deviations from the Drawings may be made to allow better accessibility, but changes of magnitude or which involve extra cost shall not be made without the acceptance of the Engineer.

#### 3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

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- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Provide a factory-authorized service representative to inspect field-assembled components and equipment installation, comply with qualification requirements in "Quality Requirements."

### 3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.10 CORRECTION OF THE WORK

- A. The cost of corrective work shall be included under the contract.
- B. Repair or remove and replace defective construction.
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 260010

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## SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Electrical equipment coordination and installation.
  - 2. Sleeves for raceways and cables.
  - 3. Sleeve seals.
  - 4. Grout.
  - 5. Common electrical installation requirements.
  - 6. Coordination drawing requirements.

#### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

#### 1.4 SUBMITTALS

- A. Product Data: For sleeve seals.

#### 1.5 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical equipment:
  - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
  - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
  - 3. To allow right of way for piping and conduit installed at required slope.
  - 4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

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- C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed. Access doors and panels are specified in Division 08 Section "Access Doors and Frames."
- D. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."
- E. Coordination drawings for electrical installation.
- F. Prepare coordination drawings according to Division 01 Section "Submittals" to a 1/4" = 1'-0" scale for floor plans. Detail major elements, components, and systems of electrical equipment and materials in relation to each other and to other systems, installations, and building components. Indicate locations and space requirements for installation, access, and working clearance. Show where sequence and coordination of installations are important to the efficient flow of the work. Coordinate drawing preparation with effort specified in other specification sections. Include the following:
  - 1. Provisions for scheduling, sequencing, moving and positioning large equipment in the building during construction.
  - 2. Floor plans, elevations and details, including the following:
    - a. Clearances to meet safety requirements and for servicing and maintaining equipment, including space for equipment disassembly required for periodic maintenance.
    - b. Equipment support details.
    - c. Exterior wall, roof and foundation penetrations of cable and raceway; and their relation to offer penetrations and installations.
    - d. Fire-rated interior wall and floor penetrations by electrical installations.
    - e. Sizes and locations of required concrete pads and bases.
- G. Reflected ceiling plans to coordinate and integrate installing air outlets and inlets, luminaires, alarm and communication systems components, sprinklers, and other ceiling-mounted items.
- H. Electrical Room Coordination Drawing: Prepare a drawing at 1/2" = 1'-0" scale including the following approved equipment: switchboards, panelboards, transformers, metering equipment, transfer switches, enclosed switches, enclosed controllers, pull boxes, lighting control equipment, dimming equipment, fire alarm equipment, security equipment, luminaires and switches, receptacles, raceways larger than 1 inch, busduct, plywood backboards, and all foreign equipment. Indicate required clearances for all equipment. Indicate ceiling height of room.

**PART 2 - PRODUCTS**

**2.1 SLEEVES FOR RACEWAYS AND CABLES**

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

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C. Sleeves for Rectangular Openings: Galvanized sheet steel.

1. Minimum Metal Thickness:

- a. For sleeve cross-section rectangle perimeter less than 50 inches and no side more than 16 inches, thickness shall be 0.052 inch.
- b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches and 1 or more sides equal to, or more than, 16 inches, thickness shall be 0.138 inch.

## 2.2 SLEEVE SEALS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Metraflex Co. or comparable product by one of the following:
  - a. Advance Products & Systems, Inc.
  - b. Calpico, Inc.
2. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
3. Pressure Plates: Plastic. Include two for each sealing element.
4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

## 2.3 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## PART 3 - EXECUTION

### 3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.

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- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

### 3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors 2 inches above finished floor level.
- G. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants."
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."
- K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel or cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

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- N. Install seal fittings on conduits and cables, as required by NEC, which are in or pass through hazardous areas.
- O. Use sealing bushings on conduit and cable ends to effectively prevent the intrusion of water, a damp or corrosive atmosphere, hot or cold air, or dust.

3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.4 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

END OF SECTION 260500

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SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
  - 1. Building wires and cables rated 600 V and less.
  - 2. Connectors, splices, and terminations rated 600 V and less.
- B. Related Sections include the following:
  - 1. Division 27 Sections "Communications Backbone Cabling" and "Communications Horizontal Cabling" for cabling used for voice data circuits.
  - 2. Division 28 Section "Conductors and Cables for Electronic Safety and Security" for cabling used for fire alarm circuits.

1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Qualification Data: For testing agency. Retain paragraph below if Contractor is responsible for field quality-control testing.
- C. Field quality-control test reports.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

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## PART 2 - PRODUCTS

### 2.1 GENERAL REQUIREMENTS

- A. Comply with requirements in Part 3 articles for where materials shall be applied.

### 2.2 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Alcan Products Corporation; Alcan Cable Division.
  - 2. American Insulated Wire Corp.; a Leviton Company.
  - 3. General Cable Corporation.
  - 4. Rome Cable Corporation.
  - 5. Southwire Company.
- B. Copper Conductors: Comply with NEMA WC 70.
- C. Conductor Insulation: Comply with NEMA WC 70 for Types XHHW.
- D. Low Leakage Conductor: Type XHHW-2 with cross-linked polyethylene insulation and mineral filler (Rome Cable Corporation #FR-XLP).
- E. Multi-conductor Cable: Comply with NEMA WC 70 for metal-clad cable, Type MC with insulated equipment ground conductor, healthcare facilities cable (Type AC cable with 90 deg C cable and insulated equipment ground conductor) with ground wire.

### 2.3 CONNECTORS AND SPLICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Hubbell Power Systems, Inc.
  - 3. O-Z/Gedney; EGS Electrical Group LLC.
  - 4. 3M; Electrical Products Division.
  - 5. Tyco Electronics Corp.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

## PART 3 - EXECUTION

### 3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

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3.2 CONDUCTOR INSULATION AND MULTI-CONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Feeders: Type XHHW, single conductors in raceway.
- B. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type XHHW, single conductors in raceway.
- C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW, single conductors in raceway.
- D. Exposed Branch Circuits, Including in Crawlspace: Type XHHW, single conductors in raceway.
- E. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type XHHW, single conductors in raceway.
- F. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway. No conduit or conductors shall be installed in concrete slabs without written permission of the Structural Engineer.
- G. Feeders and Branch Circuits Connected to Generator, Emergency or Essential Power Systems of Any Type: Type XHHW in raceway independent from all other wiring and equipment.
- H. Branch Circuits within Exam Rooms, Treatment Room, Therapy Areas, Recreational Areas, Solaria Connected to Non-Essential Branch of Power: Type XHHW, single conductors in raceway to outlet box located within 10 feet of first wiring device, luminaire, or utilization equipment indicated on documents served by branch circuit. Healthcare facilities cable (Type AC cable with 90 deg C cable and insulated equipment ground conductor) may be used on lead side of this outlet box.
- I. Branch Circuits within Operating Rooms or Rooms Containing Isolated Power Centers: Type XHHW-2 conductors with an insulated equipment ground conductor within raceway. Use of pulling compound is not permitted.
- J. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- K. Class 2 Control Circuits: Type THHN-THWN, in raceway.
- L. Minimum Branch Circuit Conductor Size: No. 12 AWG. For all 120 volt circuits in excess of 100 feet from power source to last device, provide No. 10 AWG entire length of circuit. For all 120 volt circuits in excess of 200 feet from power source to last device, provide No. 8 AWG entire length of circuit. For all 208 volt circuits in excess of 200 feet from power source to last device, provide No. 10 AWG entire length of circuit. Wherever common neutrals are utilized, increase size of neutral one wire size over phase conductor size.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

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- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- E. Support cables according to Division 26 Sections "Hangers and Supports for Electrical Systems" and "Vibration and Seismic Controls for Electrical Systems."
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."

### 3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

### 3.5 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Division 07 Section "Penetration Firestopping."

### 3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Tests and Inspections:
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors, and conductors feeding the following critical equipment and services for compliance with requirements.
  - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
  - 3. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.
    - a. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

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- b. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- C. Test Reports: Prepare a written report to record the following:
  - 1. Test procedures used.
  - 2. Test results that comply with requirements.
  - 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- D. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 260519

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## SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Other Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in Part 3 "Field Quality Control" Article, including the following:
  - 1. Grounding arrangements and connections for separately derived systems.
  - 2. Grounding for sensitive electronic equipment.
- C. Qualification Data: For testing agency and testing agency's field supervisor.
- D. Field quality-control test reports.

#### 1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

### PART 2 - PRODUCTS

#### 2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B 3.
  - 2. Stranded Conductors: ASTM B 8.

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3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
5. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

- C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 inches in cross section, unless otherwise indicated; with insulators.

## 2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.
1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

## 2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel 3/4 inch in diameter by 10 feet in length.

## PART 3 - EXECUTION

### 3.1 APPLICATIONS

- A. Bond Together the Following Electrodes if Present on Site: Metal underground water pipe, metal frame of the building, concrete encased electrode, ground ring, rod electrode, plate electrode, and all other local metal underground systems. If none of the first seven electrodes listed are present, then provide and bond together two of the last four electrodes listed.
- B. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.
- C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.
- D. Conductor Terminations and Connections:
1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  2. Connections to Structural Steel: Welded connectors.

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### 3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.
- C. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.
- D. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.
- E. Signal and Communication Equipment: For telephone, alarm, voice and data, and other communication equipment, provide No. 3/0 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
  - 1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-12-inch grounding bus.
  - 2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

### 3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
  - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.

### 3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
  - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.

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- B. Report measured ground resistances that exceed the following values:
  - 1. Power and Lighting Equipment or System with Capacity 500 kVA and Less: 10 ohms.
- C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

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## SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Hangers and supports for electrical equipment and systems.
  - 2. Construction requirements for concrete bases.
- B. Related Sections include the following:
  - 1. Division 26 Section "Vibration And Seismic Controls For Electrical Systems" for products and installation requirements necessary for compliance with seismic criteria.

#### 1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. RMC: Rigid metal conduit.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

#### 1.5 SUBMITTALS

- A. Product Data: For the following:
  - 1. Steel slotted support systems.

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- B. Shop Drawings: Show fabrication and installation details and include calculations for the following:
    - 1. Trapeze hangers. Include Product Data for components.
    - 2. Steel slotted channel systems. Include Product Data for components.
    - 3. Equipment supports.
  - C. Welding certificates.
- 1.6 QUALITY ASSURANCE
- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - B. Comply with NFPA 70.
- 1.7 COORDINATION
- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.
  - B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 07 Section "Roof Accessories."

## PART 2 - PRODUCTS

### 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit.
    - b. Cooper B-Line, Inc.; a division of Cooper Industries.
    - c. ERICO International Corporation.
    - d. GS Metals Corp.
    - e. Thomas & Betts Corporation.
    - f. Unistrut; Tyco International, Ltd.
    - g. Wesanco, Inc.
  - 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
  - 3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
  - 4. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

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- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Hilti Inc.
      - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 3) MKT Fastening, LLC.
      - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated or stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
      - 2) Empire Tool and Manufacturing Co., Inc.
      - 3) Hilti Inc.
      - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 5) MKT Fastening, LLC.
  - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
  - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  - 6. Toggle Bolts: All-steel springhead type.
  - 7. Hanger Rods: Threaded steel.

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2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Division 05 Section "Metal Fabrications" for steel shapes and plates.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with two-bolt conduit clamps, single-bolt conduit clamps or single-bolt conduit clamps using spring friction action for retention in support channel.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT and RMC may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.

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5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts, beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69, or spring-tension clamps.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.

- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

### 3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Comply with installation requirements in Division 05 Section "Metal Fabrications" for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. Field Welding: Comply with AWS D1.1/D1.1M.

### 3.4 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Touchup: Comply with requirements in Division 09 painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

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SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. ENT: Electrical nonmetallic tubing.
- C. FMC: Flexible metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work.
- C. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
  - 1. Structural members in the paths of conduit groups with common supports.
  - 2. HVAC and plumbing items and architectural features in the paths of conduit groups with common supports.
- D. Manufacturer Seismic Qualification Certification: Submit certification that enclosures and cabinets and their mounting provisions, including those for internal components, will withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems." Include the following:
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

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- a. The term "withstand" means "the cabinet or enclosure will remain in place without separation of any parts when subjected to the seismic forces specified.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- E. Qualification Data: For professional engineer and testing agency.
- F. Source quality-control test reports.
- 1.5 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  - B. Comply with NFPA 70.
- 1.6 COORDINATION
- A. Coordinate layout and installation of raceways, boxes, enclosures, cabinets, and suspension system with other construction that penetrates ceilings or is supported by them, including luminaires, HVAC equipment, fire suppression system, and partition assemblies.

## PART 2 - PRODUCTS

### 2.1 GENERAL REQUIREMENTS

- A. Comply with requirements in Part 3 articles for where materials shall be applied.

### 2.2 METAL CONDUIT AND TUBING

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Alfex Inc.
  - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
  - 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 5. Electri-Flex Co.
  - 6. Maverick Tube Corporation.
  - 7. O-Z Gedney; a unit of General Signal.
  - 8. Wheatland Tube Company.
- B. Rigid Steel Conduit: ANSI C80.1.
- C. Aluminum Rigid Conduit: ANSI C80.5.

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- D. EMT: ANSI C80.3.
- E. FMC: Zinc-coated steel.
- F. LFMC: Flexible steel conduit with PVC jacket.
- G. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
  - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
  - 2. Fittings for EMT: Steel, set-screw or compression type.
- H. Joint Compound for Rigid Steel Conduit: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

### 2.3 METAL WIREWAYS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Cooper B-Line, Inc.
  - 2. Hoffman.
  - 3. Square D; Schneider Electric.
- B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, 12 or 3R.
- C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged type.
- E. Finish: Manufacturer's standard enamel finish.

### 2.4 SURFACE RACEWAYS

- A. Surface Metal Raceways: Galvanized steel with snap-on covers. Manufacturer's standard enamel finish in color selected by Architect.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Thomas & Betts Corporation.
    - b. Walker Systems, Inc.; Wiremold Company (The).
    - c. Wiremold Company (The); Electrical Sales Division.

### 2.5 BOXES, ENCLOSURES, AND CABINETS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.

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2. EGS/Appleton Electric.
  3. Hoffman.
  4. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
  5. O-Z/Gedney; a unit of General Signal.
  6. RACO; a Hubbell Company.
  7. Spring City Electrical Manufacturing Company.
  8. Thomas & Betts Corporation.
  9. Walker Systems, Inc.; Wiremold Company (The).
- B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy or aluminum, Type FD, with gasketed cover.
- D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- E. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast aluminum or galvanized, cast iron with gasketed cover.
- F. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
- G. Cabinets:
1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  2. Hinged door in front cover with flush latch and concealed hinge.
  3. Key latch to match panelboards.
  4. Metal barriers to separate wiring of different systems and voltage.
  5. Accessory feet where required for freestanding equipment.

### PART 3 - EXECUTION

#### 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
1. Exposed Conduit: Rigid steel conduit.
  2. Concealed Conduit, Aboveground: Rigid steel conduit.
  3. Underground Conduit: RNC, Type EPC80-PVC, direct buried.
  4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

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- B. Comply with the following indoor applications, unless otherwise indicated:
1. Exposed, Not Subject to Physical Damage: EMT.
  2. Exposed, Not Subject to Severe Physical Damage: EMT.
  3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit. Includes raceways in the following locations:
    - a. Loading dock.
    - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
    - c. Mechanical rooms.
    - d. Raceways penetrating roof to within 3 feet of enclosed switch.
  4. Concealed in Ceilings and Interior Walls and Partitions: EMT. Include raceways in the following locations:
    - a. Open parking garages.
  5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
  6. Damp or Wet Locations: Rigid steel conduit.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.
  2. EMT:
    - a. Utilize steel compression fittings in the following locations:
      - 1) Damp locations.
      - 2) Boiler rooms.
      - 3) Mechanical rooms.
      - 4) Within block walls.
    - b. Utilize steel set-screw fittings in the following locations:
      - 1) Dry locations.
      - 2) Above suspended ceilings.
      - 3) Within stud walls.
- E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.

### 3.2 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

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- B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems."
  - 1. Whenever any raceway crosses an expansion or seismic joint, provide a pull box on each side of the joint with sufficient length of flexible raceway to accommodate movement in all directions. See section regarding seismic control for electrical work for additional requirements. Coordinate movement requirements at expansion and seismic joints with structural engineer of record.
- E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- F. Conceal raceway and EMT within finished walls, ceilings, and floors, unless otherwise indicated.
- G. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- H. Join raceways with fittings designed and approved for that purpose and make joints tight.
  - 1. Use insulating bushings to protect conductors. Within return air plenums utilize plenum rated bushings.
- I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Within return air plenums utilize a #10 AWG conductor in place of a plastic line.
- K. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
  - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  - 2. Where otherwise required by NFPA 70.
- L. Flexible Conduit Connections: Use maximum of 72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
  - 1. Use LFMC in damp or wet locations subject to severe physical damage.
  - 2. Use LFMC in damp or wet locations not subject to severe physical damage.
  - 3. Healthcare facilities cable may be utilized in place of FMC as permitted in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

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- M. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.
- N. Set metal floor boxes level and flush with finished floor surface.
- O. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

### 3.3 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

### 3.4 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  - 2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

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## SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Identification for raceways.
  - 2. Identification of power and control cables.
  - 3. Identification for conductors.
  - 4. Warning labels and signs.
  - 5. Instruction signs.
  - 6. Equipment identification labels.
  - 7. Miscellaneous identification products.

#### 1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.
- C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

#### 1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

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1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 POWER RACEWAY IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
  - 1. Black letters on an orange field.
  - 2. Legend: Indicate voltage and system or service type.
- C. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
  - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

2.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Colors for Raceways Carrying Circuits at 600 V and Less:
  - 1. Black letters on an orange field.
  - 2. Legend: Indicate voltage and system or service type.
- C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

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2.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

2.4 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- C. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
  - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

2.5 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Warning label and sign shall include, but are not limited to, the following legends:
  - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
  - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.6 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
  - 1. Engraved legend with black letters on white face.
  - 2. Punched or drilled for mechanical fasteners.
  - 3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.7 EQUIPMENT IDENTIFICATION LABELS

- A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

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## 2.8 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
  - 3. Temperature Range: Minus 40 to plus 185 deg F.
  - 4. Color: Black except where used for color-coding.
- B. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 7000 psi.
  - 3. UL 94 Flame Rating: 94V-0.
  - 4. Temperature Range: Minus 50 to plus 284 deg F.
  - 5. Color: Black.

## 2.9 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in Division 09 painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

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- G. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- H. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
  - 1. Outdoors: UV-stabilized nylon.
  - 2. In Spaces Handling Environmental Air: Plenum rated.
- I. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
- J. Painted Identification: Comply with requirements in Division 09 painting Sections for surface preparation and paint application.

### 3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Identify with self-adhesive vinyl label. Install labels at 10-foot maximum intervals.
- B. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
  - 1. Life Safety Power.
  - 2. Power.
- C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
  - 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder and branch-circuit conductors.
    - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
    - b. Colors for 208/120-V Circuits:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.
    - c. Colors for 480/277-V Circuits:
      - 1) Phase A: Brown.
      - 2) Phase B: Orange.
      - 3) Phase C: Yellow.

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- d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- D. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use nonmetallic plastic tag holder with adhesive-backed phase tags, and a separate tag with the circuit designation.
- E. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
- F. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.
- G. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
  - 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
  - 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
  - 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
- H. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.
  - 1. Comply with 29 CFR 1910.145.
  - 2. Identify system voltage with black letters on an orange background.
  - 3. Apply to exterior of door, cover, or other access.
  - 4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
    - a. Power transfer switches.
    - b. Controls with external control power connections.
- J. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- K. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- high letters for emergency instructions at equipment used for power transfer and load shedding.

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- L. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
    - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.
    - b. Outdoor Equipment: Stenciled legend 4 inches high.
    - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
    - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
  2. Equipment to Be Labeled:
    - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.
    - b. Enclosures and electrical cabinets.
    - c. Access doors and panels for concealed electrical items.
    - d. Emergency system boxes and enclosures.
    - e. Enclosed switches.
    - f. Enclosed circuit breakers.
    - g. Monitoring and control equipment.

END OF SECTION 260553

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## SECTION 262726 - WIRING DEVICES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
  - 2. Hospital-grade receptacles.
- B. Related Sections include the following:
  - 1. Division 27 Section "Communications Horizontal Cabling" for workstation outlets.

#### 1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GF: Ground-fault circuit interrupter.
- C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
- D. RFI: Radio-frequency interference.
- E. TVSS: Transient voltage surge suppressor.
- F. UTP: Unshielded twisted pair.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
- C. Field quality-control test reports.
- D. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

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1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of wiring device and associated wall plate through one source from a single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

1.6 COORDINATION

- A. Receptacles for Owner-Furnished Equipment: Match plug configurations.
  - 1. Cord and Plug Sets: Match equipment requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
  - 1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
  - 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
  - 3. Leviton Mfg. Company Inc. (Leviton).
  - 4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.2 STRAIGHT BLADE RECEPTACLES

- A. Hospital-Grade, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498 Supplement SD.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Hubbell or comparable project by one of the following:
    - a. Cooper; 8310 (single), 8300 (duplex).
    - b. Hubbell; HBL8310 (single), HBL8300H (duplex).
    - c. Leviton; 8310 (single), 8300 (duplex).
    - d. Pass & Seymour; 8301 (single), 8300-H (duplex).

2.3 GF RECEPTACLES

- A. General Description: Straight blade, feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.
- B. Hospital-Grade, Duplex GF Convenience Receptacles, 125 V, 20 A: Comply with UL 498 Supplement SD.

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1. Basis-of-Design Product: Subject to compliance with requirements, provide Hubbell or comparable product by one of the following:
  - a. Cooper; IG5350HG.
  - b. Hubbell; GF8300.
  - c. Leviton; 8898-HG.
  - d. Pass & Seymour; 2094-HG.

## 2.4 WALL PLATES

- A. Single and combination types to match corresponding wiring devices.
  1. Plate-Securing Screws: Metal with head color to match plate finish.
  2. Material for Finished Spaces: Smooth, high-impact thermoplastic or 0.035-inch- thick, satin-finished stainless steel as selected by the Architect. Thermoplastic cover shall be manufacturers standard color as selected by the Architect.
  3. Material for Unfinished Spaces: Smooth, high-impact thermoplastic.
  4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant , die-cast aluminum with lockable cover.

## 2.5 FINISHES

- A. Color: Wiring device catalog numbers in Section Text do not designate device color.
  1. Wiring Devices Connected to Normal Power System: As selected by Architect, unless otherwise indicated or required by NFPA 70 or device listing.
  2. Wiring Devices Connected to Emergency Power System: Red.
  3. Isolated-Ground Receptacles: As specified above, with orange triangle on face.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:
  1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
  2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
  3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.

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4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.
  2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
  3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
  4. Existing Conductors:
    - a. Cut back and pigtail, or replace all damaged conductors.
    - b. Straighten conductors that remain and remove corrosion and foreign matter.
    - c. Pigtailling existing conductors is permitted provided the outlet box is large enough.
- D. Device Installation:
1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
  2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
  3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
  4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
  5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
  6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
  7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
  8. Tighten unused terminal screws on the device.
  9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.
- E. Receptacle Orientation:
1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.
  2. Install hospital-grade receptacles in patient-care areas with the ground pin or neutral blade at the top.
- F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.
- G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

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3.2 IDENTIFICATION

A. Comply with Division 26 Section "Identification for Electrical Systems."

1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.3 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

1. In healthcare facilities, prepare reports that comply with recommendations in NFPA 99.
2. Test Instruments: Use instruments that comply with UL 1436.
3. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is not acceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

C. Test straight blade hospital-grade convenience outlets for the retention force of the grounding blade according to NFPA 99. Retention force shall be not less than 4 oz..

END OF SECTION 262726

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SECTION 280010 - ELECTRONIC SAFETY AND SECURITY TRADES REFERENCE TO GENERAL CONDITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. All provisions of Division 26 "General Conditions for Electrical Trades" apply to this Section.
- C. This section is intended to supplement the requirements of Division 01 requirements. For any conflicting requirements for minimum quantities or quality levels between this Section and Division 01, comply with the most stringent requirement.

1.2 SUMMARY

- A. This Section includes the following when associated with Division 28 work:

- 1. Permits and fees, code requirements, work under other contracts.
- 2. Work restrictions.
- 3. Specification formats and conventions.
- 4. Request for information.
- 5. Coordination.
- 6. Conflicting requirements.
- 7. Quality assurance and control.
- 8. Coordination drawings.
- 9. Construction coordination BIM model.
- 10. Product delivery, storage, and handling.
- 11. Product warranties.
- 12. Submittals.
- 13. Product selection procedures.
- 14. Product interoperability requirements.
- 15. General execution of project scope of work.
- 16. Record drawings.
- 17. Demonstration and training.
- 18. Minimum commissioning responsibilities.

- B. Related Sections include the following:

- 1. Division 01 Sections.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 280010

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SECTION 280513 - CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. UTP cabling.
  - 2. Low-voltage control cabling.
  - 3. Identification products.

1.3 DEFINITIONS

- A. BICSI: Building Industry Consulting Service International.
- B. EMI: Electromagnetic interference.
- C. IDC: Insulation displacement connector.
- D. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control and signaling power-limited circuits.
- E. Open Cabling: Passing telecommunications cabling through open space (e.g., between the studs of a wall cavity).
- F. RCDD: Registered Communications Distribution Designer.
- G. UTP: Unshielded twisted pair.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified layout technician, installation supervisor, and field inspector.
- B. Source quality-control reports.
- C. Field quality-control reports.

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1.6 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
  - 1. Test each pair of UTP cable for open and short circuits.

1.7 FIELD CONDITIONS

- A. Do not install conductors and cables that are wet, moisture damaged, or mold damaged.
  - 1. Indications that wire and cables are wet or moisture damaged include, but are not limited to, discoloration and sagging of factory packing materials.
- B. Environmental Limitations: Do not deliver or install UTP cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: 25 or less.
  - 2. Smoke-Developed Index: 50 or less.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 UTP CABLE

- A. Requirements: Comply with requirements for UTP cable in Section 271500 "Communications Horizontal Cabling."

2.3 UTP CABLE HARDWARE

- A. Requirements: Comply with requirements for UTP cable hardware in Section 271500 "Communications Horizontal Cabling."

2.4 RS-232 CABLE

- A. Plenum-Rated Cable: NFPA 70, Type CMP.
  - 1. Comply with manufacturers recommended cable type.

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2.5 RS-485 CABLE

- A. Plenum-Rated Cable: NFPA 70, Type CMP.
  - 1. Comply with manufacturers recommended cable type.

2.6 LOW-VOLTAGE CONTROL CABLE

- A. Plenum-Rated, Paired Cable: NFPA 70, Type CMP.
  - 1. Comply with manufacturers recommended cable type.

2.7 IDENTIFICATION PRODUCTS

- A. Comply with ANSI/TIA/EIA-606-A and UL 969 for labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 INSTALLATION OF HANGERS AND SUPPORTS

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for installation of supports for cables.

3.2 WIRING METHOD

- A. Install wiring in metal pathways and wireways.
  - 1. Minimum conduit size shall be 3/4 inch. Control and data transmission wiring shall not share conduit with other building wiring systems.
  - 2. Comply with requirements in Section 280528 "Pathways for Electronic Safety and Security."
- B. Install cable, concealed in accessible ceilings, walls, and floors when possible.
- C. Wiring within Enclosures:
  - 1. Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.
  - 2. Install lacing bars and distribution spools.
  - 3. Separate power-limited and non-power-limited conductors as recommended in writing by manufacturer.
  - 4. Install conductors parallel with or at right angles to sides and back of enclosure.
  - 5. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with intrusion system to terminal blocks.
  - 6. Mark each terminal according to system's wiring diagrams.
  - 7. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

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3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Comply with NECA 1.
- B. Conductors: Size according to system manufacturer's written instructions unless otherwise indicated.
- C. General Requirements for Cabling:
  - 1. Comply with ANSI/TIA/EIA-568-C.2.
  - 2. Comply with BICSI ITSIM, Ch. 6, "Cable Termination Practices."
  - 3. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, and cross-connect and patch panels.
  - 4. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
  - 5. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
  - 6. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
  - 7. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
  - 8. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
- D. UTP Cable Installation: Install using techniques, practices, and methods that are consistent with Category 6 rating of components and that ensure Category 6 performance of completed and linked signal paths, end to end.
  - 1. Comply with ANSI/TIA/EIA-568-C.2.
  - 2. Install 110-style IDC termination hardware unless otherwise indicated.
  - 3. Do not untwist UTP cables more than 1/2 inch from the point of termination to maintain cable geometry.
- E. Separation from EMI Sources:
  - 1. Comply with BICSI TDMM and ANSI/TIA-569-B recommendations for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
  - 2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
    - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
    - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
    - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.

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3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
  - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
  - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
  - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.
4. Separation between cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
  - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
  - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
  - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.
5. Separation between Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.
6. Separation between Cables and Fluorescent Fixtures: A minimum of 5 inches.

#### 3.4 CONNECTIONS

- A. Comply with requirements in Section 281600 "Intrusion Detection" for connecting, terminating, and identifying wires and cables.
- B. Comply with requirements in Section 281300 "Access Control" for connecting, terminating, and identifying wires and cables.
- C. Comply with requirements in Section 282300 "Video Surveillance" for connecting, terminating, and identifying wires and cables.

#### 3.5 FIRESTOPPING

- A. Comply with requirements in Section 078413 "Penetration Firestopping."
- B. Comply with ANSI/TIA-569-B, "Firestopping" Annex A.
- C. Comply with BICSI TDMM, "Firestopping Systems" Article.

#### 3.6 GROUNDING

- A. For communications wiring, comply with J-STD-607-A and with BICSI TDMM 12<sup>th</sup> Edition, "Bonding and Grounding (Earthing)" Chapter.
- B. For low-voltage wiring and cabling, comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

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3.7 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with ANSI/TIA/EIA-606-A. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.8 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:

1. Visually inspect UTP and optical fiber cable jacket materials for NRTL certification markings. Inspect cabling terminations to confirm color-coding for pin assignments, and inspect cabling connections to confirm compliance with ANSI/TIA-568-C.2.
2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
3. Test UTP cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross connection.

- a. Test instruments shall meet or exceed applicable requirements in ANSI/TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

4. UTP Performance Tests:

- a. Test for each outlet. Perform the following tests according to ANSI/TIA-582-C.2, Category 6, permanent link transmission performance:

- 1) Wire map.
- 2) Length (physical vs. electrical, and length requirements).
- 3) DC loop resistance.
- 4) Return loss.
- 5) Insertion loss.
- 6) PSNEXT loss.
- 7) ACRF.
- 8) PSACRF.
- 9) Propagation delay skew.
- 10) PSANEXT loss.
- 11) Average PSANEXT loss.
- 12) PSAACRF.
- 13) Average PSAACRF loss.
- 14) NEXT.
- 15) Return loss.
- 16) Propagation delay.

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- B. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 11.1 in BICSI TDMM 12<sup>th</sup> Edition as a guide, and transfer the data from the instrument to the computer, save as text files, print, and submit.
- C. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

END OF SECTION 280513

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SECTION 280544 - SLEEVES AND SLEEVE SEALS FOR ELECTRONIC SAFETY AND SECURITY PATHWAYS AND CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Sleeves for pathway and cable penetration of non-fire-rated construction walls and floors.
2. Sleeve-seal systems.
3. Sleeve-seal fittings.
4. Grout.
5. Silicone sealants.

B. Related Requirements:

1. Section 078413 "Penetration Firestopping" for penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 SLEEVES

A. Wall Sleeves:

1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.

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- D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.
- E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.
- F. Sleeves for Rectangular Openings:
  - 1. Material: Galvanized-steel sheet.
  - 2. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch.
    - b. For sleeve cross-section rectangle perimeter equal to, or more than 50 inches or more and one or more sides equal to, or more than 16 inches, thickness shall be 0.138 inch.

## 2.2 SLEEVE-SEAL SYSTEMS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and pathway or cable.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Advance Products & Systems, Inc.
    - b. CALPICO, Inc.
    - c. Metraflex Company (The).
    - d. Pipeline Seal and Insulator, Inc.
    - e. Proco Products, Inc.
  - 2. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
  - 3. Pressure Plates: Plastic.
  - 4. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

## 2.3 SLEEVE-SEAL FITTINGS

- A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Presealed Systems.

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2.4 GROUT

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
  - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
  - 2. Sealant shall have VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Silicone Foams: Multicomponent, silicone-based, liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

- A. Comply with NECA 1.
- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
  - 1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
    - a. Seal annular space between sleeve and pathway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
    - b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
  - 2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

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3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and pathway or cable unless sleeve seal is to be installed.
4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.

D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:

1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.

E. Roof-Penetration Sleeves: Seal penetration of individual pathways and cables with flexible boot-type flashing units applied in coordination with roofing work.

F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel or cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between pathway or cable and sleeve for installing sleeve-seal system.

### 3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at pathway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for pathway or cable material and size. Position pathway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pathway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Install sleeve-seal fittings in new walls and slabs as they are constructed.
- B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- C. Secure nailing flanges to concrete forms.
- D. Using grout, seal the space around outside of sleeve-seal fittings.

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3.4 SLEEVE INSTALLATION FOR FIRE-RATED COMMUNICATIONS PENETRATIONS

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for communications installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Section 078413 "Penetration Firestopping."
- B. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- C. Fire-Rated Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials.

END OF SECTION 280544

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SECTION 283111 - DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Fire-alarm control unit is existing, but modifications to unit and programming are required as part of this project.
  - 2. Transponders.
  - 3. Manual fire-alarm boxes.
  - 4. System smoke detectors.
  - 5. Heat detectors.
  - 6. Notification appliances.
  - 7. Magnetic door holders.
  - 8. Addressable interface device.

1.3 DEFINITIONS

- A. LED: Light-emitting diode.
- B. NICET: National Institute for Certification in Engineering Technologies.

1.4 SYSTEM DESCRIPTION

- A. Noncoded addressable system, with automatic sensitivity control of certain smoke detectors and multiplexed signal transmission, dedicated to fire-alarm service only.
  - 1. Interface with existing fire alarm system.

1.5 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Fire-alarm control unit and raceways shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

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1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
  - 2. Include voltage drop calculations for notification appliance circuits.
  - 3. Include battery-size calculations.
  - 4. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
  - 5. System riser diagram with all device types and cable and wire types and sizes.
  - 6. Wiring Diagrams: Power, signal and control wiring. Include diagrams for equipment and for system with all terminals and interconnections identified. Show wiring color code.
  - 7. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
  - 8. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.
- C. General Submittal Requirements:
  - 1. Shop Drawings shall be prepared by persons with the following qualifications:
    - a. Trained and certified by manufacturer in fire-alarm system design.
    - b. NICET-certified fire-alarm technician, Level III minimum.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Seismic Qualification Certificates: For fire-alarm control unit, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control reports.

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1.8 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," deliver copies to authorities having jurisdiction and include the following:
1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
  2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
  3. Record copy of site-specific software.
  4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:
    - a. Frequency of testing of installed components.
    - b. Frequency of inspection of installed components.
    - c. Requirements and recommendations related to results of maintenance.
    - d. Manufacturer's user training manuals.
  5. Manufacturer's required maintenance related to system warranty requirements.
  6. Abbreviated operating instructions for mounting at fire-alarm control unit.
  7. Copy of NFPA 25.
- B. Software and Firmware Operational Documentation:
1. Software operating and upgrade manuals.
  2. Program Software Backup: On magnetic media or compact disk, complete with data files.
  3. Device address list.
  4. Printout of software application and graphic screens.

1.9 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Lamps for Remote Indicating Lamp Units: Quantity equal to 10 percent of amount installed, but no fewer than 1 unit.
  2. Lamps for Strobe Units: Quantity equal to 10 percent of amount installed, but no fewer than 1 unit.
  3. Smoke Detectors, Fire Detectors, Addressable Interface Devices: Quantity equal to 10 percent of amount of each type installed, but no fewer than 1 unit of each type.
  4. Detector Bases: Quantity equal to 2 percent of amount of each type installed, but no fewer than 1 unit of each type.
  5. Keys and Tools: One extra set for access to locked and tamperproofed components.
  6. Audible and Visual Notification Appliances: Three of each type installed.
  7. Fuses: Two of each type installed in the system.

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1.10 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel licenses by the City and/or State.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Manufacturer Qualifications: Source must be an authorized distributor of the specified manufacturer and authorized to sell in project area.

1.11 PROJECT CONDITIONS

- A. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service according to requirements indicated:
  - 1. Notify Architect and Owner no fewer than seven days in advance of proposed interruption of fire-alarm service.
  - 2. Do not proceed with interruption of fire-alarm service without Architect's and Owner's written permission.

1.12 SEQUENCING AND SCHEDULING

- A. Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire-alarm equipment "NOT IN SERVICE" until removed from the building.
- B. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

1.13 ALLOWANCE

- A. Furnish, install, wire (with 50 ft. of approved wiring and conduit), terminate and program the following:
  - 1. Smoke Detector with Base: Quantity equal to 5 percent of units installed, but not less than two units.
  - 2. Combination Audio/Visual Notification Appliance: Quantity equal to 5 percent of units installed, but not less than five units.
  - 3. Visual Notification Appliance: Quantity equal to 5 percent of units installed, but not less than ten units.
  - 4. Manual Fire Alarm Box: Quantity equal to 5 percent of units installed, but not less than two units.
  - 5. Addressable Interface Devices: Quantity equal to 5 percent of units installed, but not less than ten units.
  - 6. Speaker: Quantity equal to 5 percent of units installed, but not less than ten units.
- B. If units are not utilized before substantial completion of Project, then at the Owner's option, either turn units over to Owner or provide credit to Owner for deletion of material and labor.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide SimplexGrinnell LP; a Tyco International company or comparable product by one of the following:

1. SimplexGrinnell LP; a Tyco International company; 4100U, existing control panel.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire-alarm signal initiation shall be by one or more of the following devices and systems:

1. Manual stations.
2. Heat detectors.
3. Smoke detectors.
4. Duct smoke detectors.
5. Verified automatic alarm operation of smoke detectors.
6. Automatic sprinkler system water flow.
7. Heat detectors in elevator shaft and pit.
8. Fire-extinguishing system operation.
9. Fire standpipe system.

- B. Fire-alarm signal shall initiate the following actions:

1. Continuously operate alarm notification appliances.
2. Identify alarm at fire-alarm control unit.
3. Transmit an alarm signal to the remote alarm receiving station.
4. Unlock electric door locks in designated egress paths.
5. Release fire and smoke doors held open by magnetic door holders.
6. Activate voice/alarm communication system.
7. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
8. Close smoke dampers in air ducts/HVAC units of designated air-conditioning duct systems serving zone where alarm was initiated.
9. Recall elevators to primary or alternate recall floors.
10. Activate emergency lighting control in assembly spaces.
11. Activate emergency shutoffs for gas, fuel and power supplies for equipment under kitchen hoods. Provide additional contactors and relays and pushbuttons to control and monitor hoods, valves, makeup fans and equipment.
12. Record events in the system memory.
13. Open smoke dampers in elevator shafts under smoke detector alarm condition in elevator lobbies.

- C. Supervisory signal initiation shall be by one or more of the following devices and actions:

1. Valve supervisory switch.
2. Elevator shunt-trip supervision.

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- D. System trouble signal initiation shall be by one or more of the following devices and actions:
1. Open circuits, shorts, and grounds in designated circuits.
  2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
  3. Loss of primary power at fire-alarm control unit.
  4. Ground or a single break in fire-alarm control unit internal circuits.
  5. Abnormal ac voltage at fire-alarm control unit.
  6. Break in standby battery circuitry.
  7. Failure of battery charging.
  8. Abnormal position of any switch at fire-alarm control unit or annunciator.
- E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control unit.

### 2.3 FIRE-ALARM CONTROL UNIT

- A. General Requirements for Fire-Alarm Control Unit:
1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
    - a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.
    - b. Include a real-time clock for time annotation of events on the event recorder and printer.
  2. Addressable initiation devices that communicate device identity and status.
    - a. Smoke sensors shall additionally communicate sensitivity setting and allow for adjustment of sensitivity at fire-alarm control unit.
  3. Addressable control circuits for operation of mechanical equipment.
- B. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.
1. Annunciator and Display: Liquid-crystal type, 2 line(s) of 80 characters, minimum.
  2. Keypad: Arranged to permit entry and execution of programming, display, and control commands and to indicate control commands to be entered into the system for control of smoke-detector sensitivity and other parameters.
- C. Circuits:
1. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class A.
    - a. Notification Appliance Circuits: Style Z.
    - b. Signaling Line Circuits: Style 6.

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2. Serial Interfaces: One RS-232 port per annunciator.
- D. Smoke-Alarm Verification:
1. Initiate audible and visible indication of an "alarm-verification" signal at fire-alarm control unit.
  2. Activate an NRTL-listed and -approved "alarm-verification" sequence at fire-alarm control unit and detector.
  3. Sound general alarm if the alarm is verified.
  4. Cancel fire-alarm control unit indication and system reset if the alarm is not verified.
- E. Notification Appliance Circuit: Operation shall sound in a temporal pattern, comply with ANSI S3.41.
- F. Elevator Recall:
1. Smoke detectors at the following locations shall initiate automatic elevator recall with signal sent to elevator controller. Alarm-initiating devices, except those listed, shall not start elevator recall.
    - a. Elevator lobby detectors other than at the designated floor.
    - b. Smoke detector in elevator machine room.
    - c. Smoke detectors in elevator hoistway.
  2. Elevator lobby detectors located on the designated recall floors shall be programmed to move the cars to the alternate recall floor.
  3. A field-mounted relay actuated by the smoke detector or the fire alarm control unit signals the elevator controller and operates building notification appliances and annunciator.
  4. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
- G. Elevator Controls: Heat detector operation shuts down elevator power by operating a shunt trip in a circuit breaker feeding the elevator.
1. A field-mounted relay actuated by the heat detector or the fire alarm control unit closes the shunt trip circuit and operates building notification appliances and annunciator.
- H. HVAC Controls: Auto/off switch located in FACP allows for manual control of each air distribution unit 2,000 cfm and over in size.
- I. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke barrier walls shall be connected to fire-alarm system.
- J. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and print out the final adjusted values on system printer.
- K. Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones in a separate cabinet as a special module that is part of fire-alarm control unit.

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1. Indicated number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of the central-control microphone. Amplifiers shall comply with UL 1711 and be listed by an NRTL.
    - a. Allow the application of and evacuation signal to indicated number of zones and, at same time, allow voice paging to the other zones selectively or in any combination.
    - b. Programmable tone and message sequence selection.
    - c. Standard digitally recorded messages for "Evacuation" and "All Clear."
    - d. Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification appliance circuits of fire-alarm control unit.
  2. Status Annunciator: Indicate the status of various voice/alarm speaker zones and the status of firefighters' two-way telephone communication zones.
  3. Preamplifiers, amplifiers, and tone generators shall automatically transfer to backup units, on primary equipment failure.
- L. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory shall be powered by 24-V dc source.
1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
  2. Power supply shall be from a circuit breaker with locking clip located in an emergency panelboard located as close to main service as possible.
- M. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
1. Batteries: Sealed, valve-regulated lead acid. Sized based upon all strobes set at 95 cd.
  2. Battery and Charger Capacity: Comply with NFPA 72. Minimum 60 hours of standby, followed by 10 minutes of alarm.
  3. Loads Not Served by Battery: Magnetic door handlers and smoke dampers.
- N. Surge Protection:
1. Install surge protection normal AC power for the FACP and its accessories. Comply with Section 264313 "Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits" for auxiliary panel suppressors.
  2. Install surge protectors recommended by FACP manufacturer. Install on all system wiring external to the building housing the FACP.
- O. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

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- P. Smoke Damper Supervision: Visible signal indication at fire alarm control unit to reflect open and closed position of dampers associated with smoke control system only. Provide multiple local addressable interface devices for each damper for control open and close and monitoring open and close independently. Provide appropriate UL relays and contactors for interface.

#### 2.4 MANUAL FIRE-ALARM BOXES

- A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
  - 1. Single-action mechanism, breaking-glass or plastic-rod type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
  - 2. Station Reset: Key-operated switch.
  - 3. Indoor Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.
  - 4. Weatherproof Protective Shield: Provide where appropriate. Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.

#### 2.5 SYSTEM SMOKE DETECTORS

- A. General Requirements for System Smoke Detectors:
  - 1. Comply with UL 268; operating at 24-V dc, nominal.
  - 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
  - 3. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
  - 4. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status. Provide remote status and alarm indicator and test station where noted or indicated.
  - 5. Remote Control: Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control unit.
    - a. Provide multiple levels of detection sensitivity for each sensor.
- B. Photoelectric Smoke Detectors:
  - 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
  - 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
    - a. Primary status.
    - b. Device type.

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- c. Present average value.
      - d. Present sensitivity selected.
      - e. Sensor range (normal, dirty, etc.).
    - 3. Multipurpose type, containing the following:
      - a. Integral Addressable Module: Arrange to communicate detector status (normal, alarm, or trouble) to the FACP.
      - b. Piezoelectric sounder rated at 88 dBA at 10 ft. according to UL 464.
      - c. Heat sensor, combination rate of rise and fixed temperature.
  - C. Duct Smoke Detectors: Photoelectric type complying with UL 268A.
    - 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
    - 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
      - a. Primary status.
      - b. Device type.
      - c. Present average value.
      - d. Present sensitivity selected.
      - e. Sensor range (normal, dirty, etc.).
    - 3. Each sensor shall have multiple levels of detection sensitivity.
    - 4. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
    - 5. Low Velocity Detectors: Design as recommended by manufacturer for the specific air velocity and installation conditions where applied.
    - 6. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit or smoke damper control.
- 2.6 HEAT DETECTORS
- A. General Requirements for Heat Detectors: Comply with UL 521.
  - B. Heat Detector, Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of 190 deg F.
    - 1. Mounting: Adapter plate for outlet box mounting or twist-lock base interchangeable with smoke-detector bases depending on location.
    - 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

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2.7 NOTIFICATION APPLIANCES

- A. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections. Color to be selected by Architect; on renovation projects, match color of existing devices.
  - 1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
- B. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch-high letters on the lens.
  - 1. Rated Light Output:
    - a. 15/30/75 field adjustable cd (batteries based upon 75 cd).
  - 2. Mounting: Wall mounted unless otherwise indicated.
  - 3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
  - 4. Flashing shall be in a temporal pattern, synchronized with other units whenever more than two units are visible in any space.
  - 5. Strobe Leads: Factory connected to screw terminals.
- C. Voice/Tone Notification Appliances:
  - 1. Appliances shall comply with UL 1480 and shall be listed and labeled by an NRTL.
  - 2. High-Range Units: Rated 2 to 15 W.
  - 3. Low-Range Units: Rated 1/8 to 2 W.
  - 4. Mounting: Flush, semirecessed or surface mounted and bidirectional.
  - 5. Matching Transformers: Tap range matched to acoustical environment of speaker location.

2.8 MAGNETIC DOOR HOLDERS

- A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching doorplate.
  - 1. Electromagnet: Requires no more than 3 W to develop 25-lbf holding force.
  - 2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
  - 3. Rating: 24-V ac or 120-V ac. See plans.
- B. Material and Finish: Match door hardware.

2.9 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.

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- B. Integral Relay: Capable of providing a direct signal to elevator controller, motor controllers, dampers, circuit-breaker shunt trip, or other devices.

#### 2.10 DEVICE GUARDS

- A. Description: Welded wire mesh of size and shape for the manual station, smoke detector, gong, or other device requiring protection.
  - 1. Factory fabricated and furnished by manufacturer of device.
  - 2. Finish: Paint of color to match the protected device.

### PART 3 - EXECUTION

#### 3.1 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72 for installation of fire-alarm equipment.
- B. Install wall-mounted equipment, with tops of cabinets not more than 72 inches above the finished floor.
  - 1. Comply with requirements for seismic-restraint devices specified in Section 260548 "Vibration and Seismic Controls for Electrical Systems."
- C. Connecting to Existing Equipment: Verify that existing fire-alarm system is operational before making changes or connections.
  - 1. Connect new equipment to existing control panel in existing part of the building.
  - 2. Connect new equipment to existing monitoring equipment at the supervising station.
  - 3. Expand, modify, and supplement existing control and monitoring equipment as necessary to extend existing control and monitoring functions to the new points. New components shall be capable of merging with existing configuration without degrading the performance of either system.
- D. Smoke- or Heat-Detector Spacing:
  - 1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
  - 2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector spacing.
  - 3. Smooth ceiling spacing shall not exceed 30 feet.
  - 4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas shall be determined according to Appendix A or Appendix B in NFPA 72.
  - 5. HVAC: Locate detectors not closer than 3 feet from air-supply diffuser or return-air opening.
  - 6. Luminaires: Locate detectors not closer than 12 inches from any part of a luminaire.
- E. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct. Install remote test switch and indicating light in location as directed in field. Coordinate installation with Division 23. Provide a permanent placard to clearly identify location of detector per

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NFPA 72. Provide one low velocity detector per each 36-inch width of transfer ducts. Locate test switch in same space as smoke detector.

- F. Transfer Duct and Plenum In-Duct Smoke Detectors: Comply with NFPA 72. Provide low velocity in-duct smoke detectors within transfer ducts and duct plenums. For transfer ducts up to 36 inches in width, provide one detector. For ducts up to 72 inches in width, provide two detectors at quarter points of the duct. For ducts greater than 72 inches in width, provide detectors 24 inches on center. Provide a permanent placard to clearly identify location of detector per NFPA 72. Provide one low velocity detector per each 36 inches in width of transfer ducts. Locate test switch in same space as smoke damper.
- G. Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location.
- H. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
- I. Audible Alarm-Indicating Devices: Install not less than 6 inches below the ceiling or 80 inches above finished floor, whichever is lower. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.
- J. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches below the ceiling. Install bottom of strobe not less than 6 inches below the ceiling or 80 inches above finished floor, whichever is lower. Install devices not less than 24 inches below the ceiling in sleeping rooms.
- K. Provide adjustable 4 watt speakers and 177 candela strobes for all mechanical, electrical, and equipment rooms with noise producing machines.
- L. Device Location-Indicating Lights: Locate in public space near the device they monitor.
- M. Manual Fire-Alarm Boxes: Install top of box at 48 inches above finished floor.
- N. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches above the finished floor.
- O. Annunciator: Install with top of panel not more than 72 inches above the finished floor.

### 3.2 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire-alarm system.
  - 1. Verify that hardware and devices are NRTL listed for use with fire-alarm system in this Section before making connections.

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- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 3 feet from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
  - 1. Smoke dampers in air ducts of designated air-conditioning duct systems.
  - 2. Smoke dampers in elevator shafts.
  - 3. Heating, ventilating and air conditioning designated equipment controls.
  - 4. Alarm-initiating connection to elevator recall system and components.
  - 5. Alarm-initiating connection to activate fire extinguishing system operation.
  - 6. Provide appropriate UL relays and auxiliary contacts to interface with mechanical equipment locally.
  - 7. Provide control and monitoring of hood systems, makeup air systems, equipment under hoods, gas valves and emergency shutoffs.
  - 8. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
  - 9. Supervisory connections at valve supervisory switches.
  - 10. Supervisory connections at elevator shunt trip breaker.
- C. Coordinate all features of fire alarm devices with HVAC systems, including interface with HVAC control systems, power and control wiring requirements. See Section 233300 "Air Duct Accessories" and HVAC control sections for requirements and sequence of operations.

### 3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Install framed instructions in a location visible from fire-alarm control unit.
- C. Paint power-supply disconnect switch red and label "FIRE ALARM."

### 3.4 GROUNDING

- A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100.

### 3.5 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed by Architect/Engineer and authorities having jurisdiction. Proper planning and scheduling (five days) is required.
- B. Perform tests and inspections.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- C. Provide additional factory-authorized technician site visits and field programming during field testing and twice for post occupancy programming adjustments and testing for Owner-initiated changes and tailoring to actual conditions during the first six months.

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D. Tests and Inspections:

1. Visual Inspection: Conduct visual inspection prior to testing.
  - a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
  - b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
3. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.

E. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.

F. Fire-alarm system will be considered defective if it does not pass tests and inspections.

G. Prepare test and inspection reports.

H. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

I. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

J. Test and Inspection Records: Prepare according to NFPA 72, including demonstration of sequences of operation by using the matrix-style form in Appendix A in NFPA 70.

K. Provide two site visits for post occupancy follow-up programming to fine tune sensitive, audio, visual, and any follow-up programming required within first year.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system for a minimum of four hours of training on two separate visits.

3.7 FIREMEN'S WATCH

A. Provide a Firemen's Watch 24-hours per day for the time period when the existing building is unsupervised by the existing and/or new fire alarm systems. As the new fire alarm system is installed and activated, the size of the Firemen's Watch can be decreased.

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1. Fire watch shall be acceptable to the City Fire Marshal.
2. Coordinate with the Owner other time periods requiring a Firemen's Watch.
3. Submit with the Bid the proposed new fire alarm system phasing procedure.

END OF SECTION 283111

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