Wayne State University
Cohn Building Fire Alarm System Upgrade 2015
WSU Project Number 048-251652
Prevailing Wage Work

FOR:
Board of Governors
Wayne State University
Detroit, Michigan

Owner’s Agent:
Loretta McClary, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3731 / 313-577-3747 fax
Ac2843@wayne.edu and copy Ab3577@wayne.edu

Owner’s Representative:
Thomas J. Edwards, Project Manager
Facilities Planning & Management
Design & Construction Services
5454 Cass
Wayne State University
Detroit, Michigan 48202

Consultant:
Fishbeck, Thompson, Carr and Huber, Inc.
39500 MacKenzie Drive, Suite 100
Novi, MI 48377

March 5, 2015
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INFORMATION FOR BIDDERS

OWNER: Board of Governors
Wayne State University

PROJECT: Cohn Building Fire Alarm System Upgrade 2015
Project No. 048-251652

LOCATION: Wayne State University
5557 Cass Ave.
Detroit, Michigan 48202

OWNER’S AGENT: Loretta McClary, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3731 / 313-577-3747 fax
Ac2843@wayne.edu & copy Ab3577@wayne.edu

OWNER’S REPRESENTATIVE: Thomas J. Edwards, Project Manager
Facilities Planning & Management
Design & Construction Services
Wayne State University
5454 Cass Avenue
Detroit, Michigan 48202

Architect: Fishbeck, Thompson, Carr and Huber, Inc.
39500 MacKenzie Drive, Suite 100
Novi, MI 48377

SPECIAL NOTE: Right to reject any and all proposals, either in whole or in part and to waive any irregularities therein is reserved by the Owner.

BIDS ADVERTISED: March 5, 2015

BIDDING: Bidding documents may be obtained by vendors from the University Purchasing Web Site at http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html beginning March 5, 2015. When visiting the Web Site, click on the "Construction" link in green. Copies of the RFP will not be available at the pre-proposal meeting.

MANDATORY Pre-Bid Conference: 11:00am, local time, March 13, 2015 to be held at Wayne State University – Facilities Planning & Management, 5454 Cass Ave., Conference Room 3, Detroit, MI, 48202. Late Arrivals may not be permitted to submit bids.

OPTIONAL Second Walk Through: (if needed) To be determined at the conclusion of the pre-bid conference, by those in attendance.

DUE DATE FOR QUESTIONS: Due Date for questions shall be March 17, 2015 at 12:00 Noon. All questions must be reduced to writing and emailed to the attention of Loretta McClary, Senior Buyer at Ac2843@wayne.edu, copy to Cynthia Branch, Buyer at: Ab3577@wayne.edu.

Bids Due: Sealed proposals for lump-sum General Contract will be received at the office of the Procurement & Strategic Sourcing located at 5700 Cass Avenue, Suite 4200, Detroit, MI 48202 on March 27, 2015, until 2:00 p.m. (local time).

No public bid opening will be held.

Bid Qualification Meeting: Bidders must be available for bid prequalification meeting the day following the bid opening. The lowest qualified bidder will be contacted and requested to meet with Facilities Planning & Management at their office located at 5454 Cass Avenue, Detroit, MI 48202. During the prequalification, the Vendor must provide
a Project Schedule and a Schedule of Values, including a list of Contractor’s suppliers, subcontractors and other qualifications.

An unsigned contract will be given to the successful Contractor at the conclusion of the Pre Award meeting, if all aspects of the bid are in order. The Contractor has 5 business days to return the contract to the Project Manager for University counter signature. The contractor must also submit a Performance Bond as outlined above and a Certificate of Insurance in the same 5 business day period. In the event the Contractor fails to return the documents in this 5 day period, the University reserves the right to award the contract to the next most responsive bidder.

All available information pertaining to this project will be posted to the Purchasing web site at [http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html](http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html). Information that is not posted to the website is not available/not known.
INSTRUCTIONS TO BIDDERS

OWNER: Board of Governors
Wayne State University

PROJECT: Cohn Building Fire Alarm System Upgrade 2015
Project No. 048-251652

LOCATION: Wayne State University
5557 Cass Ave.,
Detroit, Michigan 48202

OWNER’S AGENT: Loretta McClary, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3731 / 313-577-3747 fax
Ac2843@wayne.edu & copy Ab3577@wayne.edu

1. PROPOSALS
A. The Purchasing Agent will receive sealed Proposals for the work as herein set forth at the place
and until the time as stated in the "Information for Bidders", a copy of which is bound herewith in
theses specifications. **No public bid opening will be held.**

B. Proposals shall be for a lump-sum General Contract for the entire work of the Project as
provided in the Form of Proposal.

C. Proposals shall be submitted in duplicate on forms furnished with the Bidding documents. The
forms must be fully filled out in ink or typewritten with the signature in longhand, and the completed
forms shall be without alterations, interlineations, or erasures. Forms shall contain no
recapitulations of the work to be done. Each proposal shall be delivered in an opaque sealed
envelope, marked "PROPOSAL" AND SHALL BEAR THE NAME OF THE PROJECT AND THE
NAME OF THE BIDDER. Proposals submitted by telephone or telegraph will not be accepted.
Modifications by telephone or telegraph to previously submitted proposals will not be accepted.

D. (revised 5-29-2009) All base bids must be conforming to the detailed specifications and drawings
provided by the University, including any Addenda issued. Voluntary Alternates will only be
considered if the Contractor has also submitted a conforming base bid. Any stipulation of
voluntary alternates or qualifications contrary to the Contract requirements made by the Bidder in
or accompanying his proposal as a condition for the acceptance of the Contract will not be
considered in the award of the Contract and will cause the rejection of the entire Proposal.

E. The competency and responsibility of Bidders will be considered in making the award. The
Owner does not obligate himself to accept the lowest or any other bids. The Owner
reserves the right to reject any and all bids and to waive any informalities in the Proposals.

2. PROPOSAL GUARANTEE (revised 3-22-2012)
A. A certified check or bank draft payable to the Owner, or satisfactory Bid Bond executed by the
Bidder and Surety Company, in an amount equal to not less than five percent (5%) of the
maximum proposal amount shall be submitted with each Proposal, which amount may be forfeited
to the Board of Governors, Wayne State University, if the successful Bidder refuses to enter into a
Contract within ninety (90) days from receipt of Proposals.

B. Bond must be issued by a Surety Company with an "A rating as denoted in the AM Best Key
Rating Guide"
C. The bid deposit of all bidders except the lowest three will be returned within three (3) days after the bids are opened. After the formal Contract and bonds are approved, the bid deposit will be returned to the lowest three bidders, except when forfeited.

D. Bid bonds shall be accompanied by a Power of Attorney authorizing the signer of the bond to do so on behalf of the Surety Company.

E. Withdrawal of Proposals is prohibited for a period of ninety (90) days after the actual date of opening thereof.

3. CONTRACT SECURITY (revised 3-22-2012)

A. The successful Bidder will be required to furnish a Performance Bond and Labor and Material Payment bond in an amount equal to 100% of the contract award amount, and include such cost in the Proposal, complying with the laws of the State of Michigan. The graduated formula no longer applies.

B. Performance Bond and Labor and Material Payment Bond shall be from a surety company acceptable to the Owner and made payable as follows:

(1) A bond for 100% of the contract award amount to the Board of Governors of Wayne State University, and guaranteeing the payment of all subcontractors and all indebtedness incurred for labor, materials, or any cause whatsoever on account of the Contractor in accordance with the laws of the State of Michigan relating to such bonds.

(2) A bond for 100% of the contract award amount to the Board of Governors of Wayne State University to guarantee and insure the completion of work according to the Contract.

C. The only acceptable Performance Bond shall be the AIA A312 – 2010.

D. Bond must be issued by a Surety Company with an “A rating as denoted in the AM Best Key Rating Guide”.

4. BOND CLARIFICATION

For bids below $50,000.00,

A. Bid bond will not be required.
B. Performance Bond will not be required.

5. INSPECTION

A. Before submitting his Proposal, each Bidder shall be held to have visited the site of the proposed work and to have familiarized himself as to all existing conditions affecting the execution of the work in accordance with the Contract Documents. No allowance or extra consideration on behalf of the Contractor will subsequently be made by reason of his failure to observe the Conditions or on behalf of any subcontractor for the same reason.

6. EXPLANATION TO BIDDERS AND ADDENDA

A. Neither the Owner nor Representative nor Purchasing Agent will give verbal answers to any inquiries regarding the meaning of drawings and specifications, and any verbal statement regarding same by any person, previous to the award, shall be unauthoritative.

B. Any explanation desired by Bidders must be requested of the Purchasing Agent in writing, and if explanation is necessary, a reply will be made in the form of an Addendum, a copy of which will be forwarded to each Bidder registered on the Bidders’ List maintained by Procurement & Strategic Sourcing.
C. All addenda issued to Bidders prior to date of receipt of Proposals shall become a part of these Specifications, and all proposals are to include the work therein described.

7. **INTERPRETATION OF CONTRACT DOCUMENTS**

A. If any person contemplating submitting a bid for the proposed Contract is in doubt as to the true meaning of any part of the drawings, specifications, or other Contract Documents, he may submit to the Purchasing Agent, a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the Contract Documents will be made by an addendum duly issued. A copy of such addendum will be mailed and delivered to each registered Bidder. Each proposal submitted shall list all addenda, by numbers, which have been received prior to the time scheduled for receipt of proposal.

8. **SUBSTITUTION OF MATERIALS AND EQUIPMENT**

A. Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers’ or vendors’ names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided that the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. It shall not be purchased or installed by the Contractor without the Architect’s written approval.

9. **TAXES**

A. The Bidder shall include in his lump sum proposal and make payment of all Federal, State, County and Municipal taxes, including Michigan State Sales and Use Taxes, now in force or which may be enacted during the progress and completion of the work covered.

10. **REQUIREMENTS FOR SIGNING PROPOSALS AND CONTRACTS**

A. The following requirements must be observed in the signing of proposals that are submitted:

1. Proposals that are not signed by individuals making them shall have attached thereto a Power of Attorney, evidencing the authority to sign the Proposal in the name of the person for whom it is signed.

2. Proposals that are signed for partnership shall be signed by all of the partners or by an Attorney-in-Fact. If signed by an Attorney-in-Fact, there must be attached to the Proposal a Power of Attorney evidencing authority to sign the Proposal, executed by the partners.

3. Proposals that are signed for a corporation shall have the correct corporate name thereof and the signature of the President or other authorized officer of the corporation, manually written in the line of the Form of Proposal following the words “signed by”. If such a proposal is signed by an official other than the President of the Corporation, a certified copy of resolution of the Board of Directors, evidencing the authority of such official to sign the bid, shall be attached to it. Such proposal shall also bear the attesting signature of the Secretary of the Corporation and the impression of the corporate seal.

11. **QUALIFICATIONS OF BIDDERS**

A. The Owner may request each of the three (3) low bidders to submit information necessary to satisfy the Owner that the Bidder is adequately prepared to fulfill the Contract. Such information may include past performance records, list of available personnel, plant and equipment, description of work that will be done simultaneously with the Owner's Project, financial statement, or any other pertinent information. This information and such other information as may be requested will be used in determining whether a Bidder is qualified to perform the work required and is responsible and reliable.

12. **SPECIAL REQUIREMENTS**
A. The attention of all Bidders is called to the General Conditions, Supplementary General Conditions, and Special Conditions, of which all are a part of the Specifications covering all work, including Subcontracts, materials, etc. Special attention is called to those portions dealing with Labor Standards, including wages, fringe benefits, Equal Employment Opportunities, and Liquidated Damages.

B. Prior to award of the project, the apparent low bidder will be required to produce a schedule of values which will include the proposed subcontractors for each division of work and whether the subcontractor is signatory or non-signatory. A contract will not be issued to the apparent low bidder until this document is provided. A contractor will have one week to produce this document. If the required document is not received within this time, the bidder will be disqualified.


A. The Proposal shall be deemed as having been accepted when a copy of the Contract (fully executed by both the vendor and the appropriate signatory authority for the University), with any/all Alternates, Addenda, and Pre-Contract Bulletins, as issued by the office or agent of the Owner has been duly received by the Contractor. After signing the Contracts, the Contractor shall then return all copies, plus any required bonds and certificates of insurance, to the office of the Owner's Representative, at 5454 Cass, Wayne State University, Detroit, MI 48202. Construction will begin when the fully-executed contract has been returned to the Contractor.

14. TIME OF STARTING AND COMPLETION

A. It is understood that the work is to be carried through to substantial completion with the utmost speed consistent with good workmanship and to meet the established start and completion dates.

B. The Contractor shall begin work under the Contract without delay, upon receipt of a fully-executed contract from the Owner, and shall substantially complete the project ready for unobstructed occupancy and use of the Owner for the purposes intended within the completion time stated in the Contract.

C. The Contractor shall, immediately upon receipt of fully-executed contract, schedule his work and expedite deliveries of materials and performance of the subcontractors to maintain the necessary pace for start and completion on the aforementioned dates.

15. CONTRACTOR’S PERFORMANCE EVALUATION (2-2015)

In an effort to provide continuous process improvement regarding the construction of various university projects, Wayne State University is embarking upon a process of evaluating the contractor’s overall performance following the completion of work. At the conclusion of the construction project a subjective evaluation of the Contractor’s performance will be prepared by the Project Manager and the supervising Director of Construction. The evaluation instrument that will be used in this process is shown in Section 00440-01 - Contractor’s Performance Evaluation.

16. BIDDING DOCUMENTS

A. Bid specifications are not available at the University, but are available beginning March 5, 2015 through Wayne State University Procurement & Strategic Sourcing’s Website for Advertised Bids: http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html. The plans for this project can be viewed in advance and/or printed from the above website. Copies of the RFP will not be available at the pre-proposal meeting.

B. DOCUMENTS ON FILE (revised 12-2007)

(1) Wayne State University Procurement & Strategic Sourcing’s Website. All available information pertaining to this project will be posted to the Purchasing web site at http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html. Information that is not posted to the website is not available/not known.
(2) Notification of this Bid Opportunity has been sent to DUNN BLUE (for purchase of Bid Documents only), DODGE REPORTS, REED CONSTRUCTION, CONSTRUCTION NEWS and the CONSTRUCTION ASSOCIATION OF MICHIGAN (CAM).

(3) Please note: Effective December 1, 2007, bid notices will be sent only to those Vendors registered to receive them via our Bid Opportunities list serve. To register, to http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html, and click on the “Join our Listserv” link at the top of the page.
NOTICE OF MANDATORY PRE-BID CONFERENCE

PROJECT: Cohn Building Fire Alarm System Upgrade 2015.

PROJECT NOS.: WSU PROJECT NO. 048-251652

It is MANDATORY that each Contractor proposing to bid on this work must attend a pre-bid conference at the following location:

Wayne State University
Facilities Planning & Management
5454 Cass Ave., Conference Room 3
Detroit MI 48202

11:00am, local time, March 13, 2015

The purpose of this conference is to clarify the procedures, scope of work, and to identify any omissions and/or inconsistencies that may impede preparation and submission of representative competitive bids.

An attendance list shall be prepared and minutes of the conference shall be furnished to all those attending.

Any clarifications or corrections that cannot be made at the conference will be by Addendum.

For your convenience a map of the University and appropriate parking lots can be downloaded and printed from: http://campusmap.wayne.edu. Guest parking in any of the University student and guest lots is $7.00. A detailed list of Cash & Coin operated lots can be viewed at http://purchasing.wayne.edu/cash_and_credit_card_lots.php. Cash lots dispense change in quarters. Due to time constraints, Vendors are encouraged to avoid parking at meters on the street (especially blue “handicapped” meters).

All available information pertaining to this project will be posted to the Purchasing web site at http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html. Information that is not posted to the website is not available/not known.
AGENDA

I. Welcome and Introductions
   A. Wayne State University Representatives
   B. Vendor Representatives
   C. Sign in Sheet- be sure to include your fax number and email address (LEGIBLY) on the sign in sheet.

II. Brief Overview of Wayne State University
   A. Purpose and Intent of RFP.
   B. Detailed review of the RFP and the requirements for a qualified response.
   C. Review of all pertinent dates and forms that are REQUIRED for a qualified response.

III. Vendor Questions/Concerns/Issues
   A. Questions that can be answered directly by the appropriate person in this meeting will be answered and both question and answer will be recorded in the minutes of the meeting.
   B. Questions that need to be researched will be answered and a nature of clarification will be emailed to the appropriate ListServ. See http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_Bid_Listserve.html for a list of ListServ Bid Lists.
   C. Minutes will be emailed to all participants of the meeting within a reasonable amount of time. (be sure to include your email address/addresses on the sign in sheet)
   D. Questions and concerns that come up after this meeting are to be addressed to Loretta McClary, Procurement & Strategic Sourcing. Discussion with other University members is seriously discouraged and could lead to disqualification from further consideration. All questions and answers will be recorded and emailed to all participants of the RFP.
   E. Due date for questions is March 17, 2015, 12:00 noon.

IV. Proposal Due Date- March 27, 2015, 2:00 p.m.

V. Final Comments

VI. Adjourn
VENDOR NAME

GENERAL CONTRACT - PROPOSAL FORM (revised 1 - 2011)

Please Note – Vendors must Pre-qualify themselves when responding to this bid opportunity. Our Prequalification questions can be found on page 4 of this section.

OWNER: Board of Governors
Wayne State University

PROJECT: Cohn Building Fire Alarm System Upgrade 2015

PROJECT NO.: WSU PROJECT NO. 048-251652

PROJECT TYPE: Electrical Work

PURCHASING AGENT: Loretta McClary, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3731/ 313-577-3747 fax
Ac2843@wayne.edu & copy Ab3577@wayne.edu

OWNER’S REPRESENTATIVE: Thomas J. Edwards, Project Manager
Design & Construction Services
Facilities Planning & Management
Wayne State University
5454 Cass Avenue
Detroit, Michigan 48202

TO:
Board of Governors
Wayne State University
Detroit, Michigan

BASE PROPOSAL:
The undersigned agrees to enter into an Agreement to complete the entire work of the Cohn Building Fire Alarm System Upgrade 2015 project (WSU Project No. 048-251652) in accordance with the Bidding Documents for the following amounts:

$ Dollars

UNIT PRICING (as listed in the detailed specifications, section - 01-22-00).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Unit Price</th>
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<tr>
<td>Unit Price 1</td>
<td>Duct Mounted Smoke Detector</td>
<td>$ Each</td>
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<td>Unit Price 2</td>
<td>Area Smoke Detector</td>
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<tr>
<td>Unit Price 3</td>
<td>Wall Mounted Notification Appliance (Strobe)</td>
<td>$ Each</td>
</tr>
<tr>
<td>Unit Price 4</td>
<td>Ceiling Mounted Notification Appliance (Strobe)</td>
<td>$ Each</td>
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### Lawn Replacement:
The undersigned agrees that, in the event of existing lawn or landscaping damage, due to the Contractor's work, that has not been properly addressed and repaired to the satisfaction of the University, the University may repair/replace the lawn and/or landscaping, and that the expense will be at a unit cost of $10.00 per square yard for lawn, and landscaping at a rate of 1.5 times the cost of said repairs, the full cost of which shall be reimbursed by the contractor.

### Contract Change Orders: (revised 4-01-2011)
The undersigned agrees to the following pricing formula and rates for changes in the contract work:

1. For subcontract work, Contractor's markup for handling, overhead, profit and bonding on subcontractors sell price, shall not exceed 5%.
   1.1. For subcontract work that is provided on a time and material basis, the subcontractor shall be permitted a single markup for handling, overhead, profit and bonding of 5%. When a markup is identified in the subcontractor's hourly labor rate, additional markup on labor is not permitted.
     1.1.1 For changes that are based upon a lump sum value, subcontractor shall provide all labor and material back-ups to ensure that duplicative charges are avoided and authorized mark-ups for OH&P can be confirmed.

2. For work by his own organization, Contractor's markup for job* and general overhead, profit and bonding shall not exceed 5% of the net labor** and material costs.

Within 14 days of the project's contract execution Contractor shall provide to the Owner; Subcontractor’s hourly labor rate breakdown details. This requirement shall extend to the lowest level of subcontractor participation.

* Job and general overhead includes supervision and executive expenses; use charges on small tools, scaffolding, blocking, shores, appliances, etc., and other miscellaneous job expenses.

** Net labor cost is the sum of the base wages, fringe benefits established by governing trade organizations, applicable payroll taxes, and increased expense for contractor's liability insurance (Workman's Compensation, P.L. and P.D.).

### Time of Completion: (revised 4-01-2011)
The Contract is expected to be fully executed on or about 25 calendar days after successful bidder qualification and recommendation of award. The undersigned agrees to start construction immediately after receipt of a fully executed contract, and to complete the work as follows:

Substantial Completion will be completed no later than October 30, 2015.

### Liquidated Damages:
It is understood and agreed that, if project is not completed within the time specified in the contract plus any extension of time allowed pursuant thereto, the actual damages
sustained by the Owner because of any such delay, will be uncertain and difficult to ascertain, and it is agreed that the reasonable foreseeable value of the use of said project by Owner would be the sum of $250.00, Two Hundred Fifty Dollars per day, and therefore the contractor shall pay as liquidated damages to the Owner the sum of $250.00, Two Hundred Fifty Dollars per day for each day's delay in substantially completing said project beyond the time specified in the Contract and any extensions of time allowed thereunder.

TAXES:
The undersigned acknowledges that prices stated above include all applicable taxes of whatever character or description. Michigan State Sales Tax is applicable to the work. Bidder understands that the Owner reserves the right to reject any or all bids and to waive informalities or irregularities therein.

ADDENDA:
The undersigned affirms that the cost of all work covered by the following Addenda are included in the lump sum price of this proposal.

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<tr>
<th>Addendum No.</th>
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<td>Date</td>
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<td>Date</td>
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CONTRACTOR’S PREQUALIFICATION STATEMENT & QUESTIONNAIRE:

Our Minimum Requirements for Construction Bids are:

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<th>Criteria</th>
<th>Small Project bid less than $50,000</th>
<th>Medium Project bid between $50,001 and $250,000</th>
<th>Large Project bid between $250,001 and $2 million</th>
<th>Very Large Project bid greater than $2 million</th>
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<td>3 Years</td>
<td>5 Years</td>
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<td>Demonstrated Experience in Projects Similar in Scope and Price in the last 3 years</td>
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<td>Unsuccessful Projects on Campus in last 3 years</td>
<td>None Allowed</td>
<td>None Allowed</td>
<td>None Allowed</td>
<td>None Allowed</td>
</tr>
<tr>
<td>Failure to comply with Prevailing Wage and/or Project Labor requirements</td>
<td>None Allowed</td>
<td>None Allowed</td>
<td>None Allowed</td>
<td>None Allowed</td>
</tr>
<tr>
<td>Withdrawn University Bid (with or without Bond forfeiture) within the last 3 years **</td>
<td>1 or less</td>
<td>1 or less</td>
<td>1 or less</td>
<td>1 or less</td>
</tr>
<tr>
<td>Company currently not in Chapter 11 of the US Bankruptcy Code</td>
<td>1 Year</td>
<td>2 Years</td>
<td>3 Years</td>
<td>3 Years</td>
</tr>
</tbody>
</table>
** Withdrawal of a bid is subject to the University suspension policy, for a period up to one year.

Contractors must complete the following information to determine their eligibility to participate in this bid. This information is required with your Bid to the University

Failure to complete this form in its entirety will result in your bid being disqualified.

Check one of the following on the makeup of your company:

- Corporation
- Individual
- Partnership
- Joint Venture
- Other (Explain)

1. How many years has your organization been in business as a contractor? ________________

2. How many years has your organization been in business under its present business name? __________

3. List states in which your organization is legally qualified to do business. ____________________________________________

4. Provide the Name and Address of your Liability Insurance Carrier. ________________________________

5. What is your current EMR Rating? ________________
   The minimum requirement is an EMR Rating of 1.0 or less for all projects. Bidders with a rating higher than 1.0 understand that their bid may be disqualified, at the sole discretion of the University.

6. What percentage of work performed on projects are by company employees; excluding any hired subcontracting and outsourced relationships, for the bid submitted? ________%

7. What percentage of work performed on your companies behalf are by subcontracted business relationships; disallowing 1099 contracting work forces, for the bid submitted? ________%

8. Have you ever failed to complete any work awarded to you? If so, attach a separate sheet of explanation. Include the name of the Project, the customer, the dates of the work, and the amount of the contract?

9. Have you withdrawn a bid after a University bid opening and/or refused to enter into a contract with the University upon notification of award within the last 3 years? If so, state the Project Name and Number, and the date of bid submission below.

10. Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a construction contract? If so, attach a separate sheet of explanation.

11. List the construction experience of the principals and superintendents of your company.

   Name: __________________________________ Title: ___________________________________
Name: __________________________________ Title: _____________________________________
_________________________________________________________________________________
Name: __________________________________ Title: _____________________________________
_________________________________________________________________________________

12. List the construction Projects, and approximate dates, when you performed work similar in Scope to this project.

Project: ___________________________________   Owner: __________________________________
Contract Amount: ___________________________   Date Completed: _________________________

Project: ___________________________________   Owner: __________________________________
Contract Amount: ___________________________   Date Completed: _________________________

Project: ___________________________________   Owner: __________________________________
Contract Amount: ___________________________   Date Completed: _________________________

13. List the construction Projects, and approximate dates, when you performed work similar in Dollar Amount to this project.

Project: ___________________________________   Owner: __________________________________
Contract Amount: ___________________________   Date Completed: _________________________

Project: ___________________________________   Owner: __________________________________
Contract Amount: ___________________________   Date Completed: _________________________

Project: ___________________________________   Owner: __________________________________
Contract Amount: ___________________________   Date Completed: _________________________

14. Is your Company “bondable”?     Yes     No

15. What is your present bonding capacity?   $   ________________________________

16. Who is your bonding agent?
NAME:   ________________________________
ADDRESS:   ________________________________
PHONE:   ________________________________
CONTACT:   ________________________________

17. Does your company agree to provide financial reports to the University upon request? Failure to agree may result in disqualification of your bid. Yes   No
18. Does your company agree that all of the Terms and Conditions of this RFP and Vendor’s Response Proposal become part of any ensuing agreement? Yes ______ No____

19. Does your company agree to execute a contract containing the clauses shown in Section 00500 “Agreement Between Contractor and Owner for Construction”? Yes _____ No____

If “No”, clearly note any exceptions to any information contained in the contract documents and include with your proposal.

20. Did your company quote based upon Prevailing Wage Rates? Yes _____ No____

Note: Contractors submitting proposals for this project may, at the discretion of the University, be required to submit references including contact information to be used to assist in the post bid evaluation process for the subject project.

ACKNOWLEDGEMENT OF MINIMUM QUALIFICATIONS:

The undersigned has read and understands the minimum qualifications for University construction projects, and has completed the Prequalification section completely and accurately. The undersigned understands that a contractor, who fails to meet the minimum qualifications in the category identified for this project, will be disqualified from consideration for the project.

ACCEPTANCE OF PROPOSAL:

The undersigned agrees to execute a Contract, being the Wayne State University standard form titled "Agreement Between Contractor and Owner for Construction" (see section 00500 of the bid documents), provided that we are notified of the acceptance of our Proposal within ninety (90) days of the date set for the opening thereof.

The undersigned below understands that the bid will be disqualified if the Prequalification information above is not completed in its entirety.

NAME OF COMPANY:

________________________________________________________________________

OFFICE ADDRESS:

________________________________________________________________________

PHONE NUMBER: __________________ DATE________________

FAX NUMBER:

________________________________________________________________________

SIGNED BY:

________________________________________________________________________

Signature

(Please print or type name here)

TITLE

________________________________________________________________________

EMAIL ADDRESS: @

________________________________________________________________________
A. See also Page 00100-4 Section 12.B

B. Wayne State University requires all project contractors, including subcontractors, who provide labor on University projects to compensate at a rate no less than prevailing wage rates.

C. The rates of wages and fringe benefits to be paid to each class of laborers and mechanics by each VENDOR and subcontractor(s) (if any) shall be not less than the wage and fringe benefit rates prevailing in Wayne County, Michigan, as determined by the United States Secretary of Labor. Individually contracted labor commonly referred to as “1099 Workers” and subcontractors using 1099 workers are not acceptable for work related to this project.

D. To maintain compliance with State of Michigan Ordinances, Certified Payroll must be provided for each of the contractor’s or subcontractor’s payroll periods for work performed on this project. Certified Payroll should accompany all Pay Applications. Failure to provide certified payroll will constitute breach of contract, and pay applications will be returned unpaid, and remain so until satisfactory supporting documents are provided.

A Prevailing Wage Rate Schedule has been issued from the State of Michigan that is enclosed in this section. Additional information can be found on the University Procurement & Strategic Sourcing's web site at the following URL address:

http://purchasing.wayne.edu/vendors/wage-rates.php

If you have any questions, or require rates for additional classifications, please contact:

Michigan Department of Consumer & Industry Services,
Bureau of Safety and Regulation, Wage and Hour Division,
7150 Harris Drive,
P.O. Box 30476,
Lansing, Michigan 48909-7976

http://www.michigan.gov/dleg/0,1607,7-154-27673_27706--,00.html

F. Wayne State University's Prevailing Wage Requirements:

When compensation will be paid under prevailing wage requirements, the University shall require the following:

A. The contractor shall obtain and keep posted on the work site, in a conspicuous place, a copy of all current prevailing wage and fringe benefit rates.

B. The contractor shall obtain and keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each laborer and mechanic employed in connection with this contract.

C. The contractor shall submit a completed certified payroll document [U.S. Department of Labor Form WH 347] verifying and confirming the prevailing wage and benefits rates for all employees and subcontractors for each payroll period for work performed on this project. The contractor shall include copies of pay stubs for all employee or contract labor payments related to Wayne State University work. The certified payroll form can be downloaded from the Department of Labor website at http://www.dol.gov/whd/forms/wh347.pdf.

D. A properly executed sworn statement is required from all tiers of contractors, sub-contractors and suppliers which provide services or product of $1,000.00 or greater. Sworn statements must accompany applications for payment. All listed parties on a sworn statement and as a subcontractor must submit Partial or Full Conditional Waivers for the amounts invoiced on the payment application. A copy of the acceptable WSU Sworn Statement and Waiver will be provided to the awarded contractor.
E. Apprentices for a skilled trade must provide proof of participation in a Certified Apprenticeship Program and the level of hours completed in the program.

F. Daily project sign-in sheets and field reports for the project must be turned in weekly.

Note: Contractor invoices WILL NOT be processed until all listed certified payroll documents are received.

G. If the VENDOR or subcontractor fails to pay the prevailing rates of wages and fringe benefits and does not cure such failure within 10 days after notice to do so by the UNIVERSITY, the UNIVERSITY shall have the right, at its option, to do any or all of the following:

1. Withhold all or any portion of payments due the VENDOR as may be considered necessary by the UNIVERSITY to pay laborers and mechanics the difference between the rates of wages and fringe benefits required by this contract and the actual wages and fringe benefits paid;

2. Terminate this contract and proceed to complete the contract by separate agreement with another vendor or otherwise, in which case the VENDOR and its sureties shall be liable to the UNIVERSITY for any excess costs incurred by the UNIVERSITY.

3. Propose to the Director of Purchasing that the Vendor be considered for Debarment in accordance with the University’s Debarment Policy, found on our website at http://purchasing.wayne.edu/docs/appm28.pdf

Terms identical or substantially similar to this section of this RFP shall be included in any contract or subcontract pertaining to this project.

H. The current applicable prevailing wage rates as identified by the State of Michigan Department of Consumer & Industry Services, Bureau of Safety and Regulation, Wage and Hour Division are attached. Refer to item C above if additional information is required.

I. Prior to award of the project, the apparent low bidder will be required to produce a schedule of values which will include the proposed subcontractors for each division of work and whether the subcontractor is signatory or non-signatory. A letter of intent or contract will not be issued to the apparent low bidder until this document is provided. The apparent low bidder will have one week to produce this document. If the required document is not received within this time, the bidder will be disqualified, and the next low bidder will be required to provide this schedule of values.

SEE ATTACHED STATE PREVAILING WAGE INFORMATION
## Asbestos & Lead Abatement Laborer

- **Name:** Asbestos & Lead Abatement Laborer
- **MLDC:**
- **Updated:** 10/1/2014
- **Last Updated:** 10/1/2014
- **Straight Time:** $40.25
- **Half Time:** $53.64
- **Double Time:** $67.03
- **Overtime Provision:** H H X X X X D Y

4 ten hour days @ straight time allowed
Monday-Saturday, must be consecutive

## Asbestos & Lead Abatement, Hazardous Material Handler

- **Name:** Asbestos and Lead Abatement, Hazardous Material Handler
- **AS207:**
- **Updated:** 10/1/2014
- **Last Updated:** 10/1/2014
- **Straight Time:** $40.25
- **Half Time:** $53.58
- **Double Time:** $66.90
- **Overtime Provision:** H H X X X X D Y

4 ten hour days @ straight time allowed
Monday-Saturday, must be consecutive

## Boilermaker

- **Name:** Boilermaker
- **BO169:**
- **Updated:** 2/17/2015
- **Last Updated:** 2/17/2015
- **Straight Time:** $54.70
- **Half Time:** $81.08
- **Double Time:** $107.45
- **Overtime Provision:** H H H H H H D Y

### Apprentice Rates:

<table>
<thead>
<tr>
<th>Apprentice Period</th>
<th>$</th>
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<th>$</th>
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<tbody>
<tr>
<td>1st 6 months</td>
<td>40.31</td>
<td>59.49</td>
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<td>42.57</td>
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<td>44.81</td>
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<td>6th 6 months</td>
<td>48.63</td>
<td>72.50</td>
<td>96.36</td>
</tr>
<tr>
<td>7th 6 months</td>
<td>49.32</td>
<td>73.01</td>
<td>96.69</td>
</tr>
<tr>
<td>8th 6 months</td>
<td>51.58</td>
<td>76.40</td>
<td>101.21</td>
</tr>
</tbody>
</table>

---

**Official Request #: 277**  
**Requestor:** Wayne State University  
**Project Description:** Cohn Building - Fire Alarm System Upgrade  
**Project Number:** 048-251652  
**County:** Wayne

---

**Wayne County**  
**Official 2015 Prevailing Wage Rates for State Funded Projects**  
**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

---

**Classification Last  Straight Time and  a Double  Overtime**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Updated</th>
<th>Hourly</th>
<th>Half</th>
<th>Double</th>
<th>Overtime</th>
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<tr>
<td></td>
<td>Asbestos &amp; Lead Abatement Laborer</td>
<td>MLDC 10/1/2014</td>
<td>$40.25</td>
<td>$53.64</td>
<td>$67.03</td>
<td>H H X X X X D Y</td>
</tr>
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<td>Asbestos and Lead Abatement, Hazardous Material Handler</td>
<td>AS207 10/1/2014</td>
<td>$40.25</td>
<td>$53.58</td>
<td>$66.90</td>
<td>H H X X X X D Y</td>
</tr>
<tr>
<td></td>
<td>Boilermaker</td>
<td>BO169 2/17/2015</td>
<td>$54.70</td>
<td>$81.08</td>
<td>$107.45</td>
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</tr>
</tbody>
</table>

---

**Apprentice Rates:**

<table>
<thead>
<tr>
<th>Apprentice Period</th>
<th>$</th>
<th>$</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 6 months</td>
<td>40.31</td>
<td>59.49</td>
<td>78.67</td>
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<td>41.45</td>
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<td>49.32</td>
<td>73.01</td>
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</tr>
<tr>
<td>8th 6 months</td>
<td>51.58</td>
<td>76.40</td>
<td>101.21</td>
</tr>
</tbody>
</table>

---

**Official Rate Schedule**

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
### Official Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015  
**Page 2 of 33**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Hourly</th>
<th>Double Time</th>
<th>Overtime Provision</th>
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<tbody>
<tr>
<td>Bricklayer</td>
<td>Bricklayer, stone mason, pointer, cleaner, BR1</td>
<td>10/15/2014</td>
<td>$52.43 $78.65 $104.86</td>
<td>H H D H D D D D Y</td>
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</tr>
<tr>
<td></td>
<td>BR1 Make up day allowed comment</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Saturday for 5 day 8 hour week</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friday for 4 day 10 hour week</td>
<td></td>
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<td>4 10s allowed M-TH</td>
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<td>Apprentice Rates:</td>
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</tr>
<tr>
<td></td>
<td>First 6 months</td>
<td></td>
<td>$31.87 $47.81 $63.74</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>2nd 6 months</td>
<td></td>
<td>$33.72 $50.60 $67.44</td>
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<tr>
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<td></td>
<td>$35.57 $53.37 $71.14</td>
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<td>$37.42 $56.14 $74.84</td>
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<td>$39.27 $58.92 $78.54</td>
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<td></td>
<td>6th 6 months</td>
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<td>$41.12 $61.70 $82.24</td>
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<tr>
<td></td>
<td>7th 6 months</td>
<td></td>
<td>$42.97 $64.46 $85.94</td>
<td></td>
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<td></td>
<td>8th 6 months</td>
<td></td>
<td>$44.82 $67.24 $89.64</td>
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<tr>
<td>Carpenter</td>
<td>Diver CA 687 D</td>
<td>6/25/2014</td>
<td>$64.65 $93.14 $121.63</td>
<td>X X X H X H D Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diver Make up day allowed comment</td>
<td></td>
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<tr>
<td></td>
<td>Saturday</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
## Official Prevailing Wage Rates for State Funded Projects

### Issue Date: 3/4/2015

### Contract must be awarded by: 6/2/2015

### Page 3 of 33

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name</th>
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<th>Straight Time</th>
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<td></td>
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</tbody>
</table>

*Carpet and Resilient Floor Layer, (does not include installation of prefabricated formica & parquet flooring which is to be paid carpenter rate)*

### Apprentice Rates:

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<td></td>
</tr>
</tbody>
</table>

1st 6 months $24.23 $32.71 $41.18
2nd 6 months $28.25 $38.73 $49.22
3rd 6 months $30.35 $41.88 $53.42
4th 6 months $32.44 $45.02 $57.60
5th 6 months $34.54 $48.17 $61.80
6th 6 months $36.63 $51.31 $65.98
7th 6 months $38.74 $54.48 $70.20
8th 6 months $40.82 $57.59 $74.36

### Carpenter

*four 10s allowed Mon-Sat; double time due when over 12 hours worked per day*

*Make up day allowed comment Saturdays*

### Apprentice Rates:

<p>| | | | | | | |</p>
<table>
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</tbody>
</table>

1st year $33.82 $46.92 $60.00
3rd 6 months $36.21 $50.49 $64.78
4th 6 months $38.58 $54.05 $69.52
5th 6 months $40.97 $57.64 $74.30
6th 6 months $43.33 $61.17 $79.02
7th 6 months $45.72 $64.77 $83.80
8th 6 months $48.09 $68.32 $88.54
## Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

### Page 4 of 33

<table>
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<th>Classification</th>
<th>Name Description</th>
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<th>Double Time</th>
<th>Overtime Provision</th>
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<tbody>
<tr>
<td>Piledriver</td>
<td>CA687Z1P</td>
<td>6/24/2014</td>
<td>$55.24</td>
<td>$79.04</td>
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<tr>
<td></td>
<td>Four 10s allowed Monday-Saturday; double time due when over 12 hours worked per day</td>
<td></td>
<td></td>
<td></td>
<td>Make up day allowed comment Saturday</td>
</tr>
</tbody>
</table>

**Apprentice Rates:**

- 1st 6 months: $33.82, $46.92, $60.00
- 2nd 6 months: $38.58, $54.05, $69.52
- 3rd 6 months: $43.33, $61.17, $79.02
- 4th 6 months: $48.09, $68.32, $88.54

| Cement Mason | Cement Mason | br1cm | 10/15/2014 | $50.05 | $71.17 | $92.28 | X X H H H H D N |

**Apprentice Rates:**

- 1st 6 months: $29.13, $39.45, $49.77
- 2nd 6 months: $31.20, $42.54, $53.87
- 3rd 6 months: $35.31, $48.67, $62.01
- 4th 6 months: $39.46, $54.85, $70.23
- 5th 6 months: $41.52, $57.91, $74.30
- 6th 6 months: $45.67, $64.10, $82.52

| Cement Mason | Cement Mason | CE514 | 11/10/2011 | $46.30 | $64.89 | $83.48 | H H D H H H D N |

**Apprentice Rates:**

- 1st 6 months: $26.77, $36.07, $45.36
- 2nd 6 months: $28.68, $38.91, $49.13
- 3rd 6 months: $32.50, $44.59, $56.66
- 4th 6 months: $36.32, $50.26, $64.19
- 5th 6 months: $38.24, $53.11, $67.98
- 6th 6 months: $42.06, $58.79, $75.51

---

**Official Request #:** 277  
**Requestor:** Wayne State University  
**Project Description:** Cohn Building - Fire Alarm System Upgrade  
**Project Number:** 048-251652  
**County:** Wayne

---

**Official Rate Schedule**  
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Page 4 of 33
## Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

### Page 5 of 33

<table>
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<tr>
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<th>Last Updated</th>
<th>Straight Time and a Half Hourly</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
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#### Drywall

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- Four 10s allowed Monday-Thursday
- Make up day allowed comment
- Friday make-up day for bad weather or holidays

**Apprentice Rates:**

- First 3 months: $31.16, $37.79, $44.41
- Second 3 months: $33.81, $41.76, $49.71
- Second 6 months: $36.46, $45.73, $55.01
- Third 6 months: $39.11, $49.71, $60.31
- 4th 6 months: $40.43, $51.69, $62.95

#### Electrician

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**Apprentice Rates:**

- 0-1000 hours: $36.73, $44.12, $51.51
- 1000-2000 hours: $38.58, $46.89, $55.21
- 2000-3500 hours: $40.43, $49.67, $58.91
- 3500-5000 hours: $42.27, $52.44, $62.59
- 5000-6500 hours: $45.97, $57.98, $69.99
- 6500-8000 hours: $49.67, $63.53, $77.39

#### Sound and Communication Installer/Technician

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**Apprentice Rates:**

- Period 1: $24.67, $31.07, $37.47
- Period 2: $25.95, $32.99, $40.03
- Period 3: $27.24, $34.93, $42.61
- Period 4: $28.51, $36.83, $45.15
- Period 5: $29.79, $38.75, $47.71
- Period 6: $31.07, $40.67, $50.27

---

**Official Request #:** 277  
**Requestor:** Wayne State University  
**Project Description:** Cohn Building - Fire Alarm System Upgrade  
**Project Number:** 048-251652  
**County:** Wayne

---

**Official Rate Schedule**  
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

---

**Page 5 of 33**
Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 3/4/2015
Contract must be awarded by: 6/2/2015

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
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<th>Straight Time and a Half Hourly Provision</th>
<th>Double Time Provision</th>
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Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Statewide

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015  
**Project Number:** 048-251652

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Provision</th>
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<tbody>
<tr>
<td><strong>Heat and Frost Insulator and Asbestos Worker</strong></td>
<td>Heat and Frost Insulators and Asbestos Workers</td>
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<td>Four 10s must be worked for a minimum of 2 consecutive weeks, Monday thru Thursday. All hours worked in excess of 10 will be paid at double time. All hours worked on the fifth day,</td>
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<td>comment Four 10s must be worked for a minimum of 2 consecutive weeks. OVERTIME is different on a four 10 week. OT is 2x for hours beyond 10. All hours on fifth day, M-F require time and one half. Sat first 8 hours, 1.5, all hours after 8 require double time.</td>
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<td><strong>Apprentice Rates:</strong></td>
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<td>4th Year</td>
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| **Ironworker** | Fence, Sound Barrier & Guardrail erection/installation and Exterior Signage work | IR-25-F1 2/24/2015 | $34.65 $46.65 $58.65 X X H X X H D Y |
| | | | Four ten hour work days may be worked during Monday-Saturday. |
| **Apprentice Rates:** | | | |
| 60% Level | $24.25 $31.45 $38.65 |
| 65% Level | $25.55 $33.35 $41.15 |
| 70% Level | $26.86 $35.26 $43.66 |
| 75% Level | $28.15 $37.15 $46.15 |
| 80% Level | $29.45 $39.05 $48.65 |
| 85% Level | $30.75 $40.95 $51.15 |

---

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Project Description: Cohn Building - Fire Alarm System Upgrade  
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County: Wayne  

Official Rate Schedule  
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015

**Contract must be awarded by:** 6/2/2015

**Page 8 of 33**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Hourly</th>
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<td>comment</td>
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<td>4 tens may be worked Monday thru Thursday</td>
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Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
## Rigging Work

### Apprentice Rates:
- **Level 1 & 2**: $36.63 $54.59 $72.55
- **Level 3**: $39.46 $58.84 $78.21
- **Level 4**: $42.28 $63.07 $83.85
- **Level 5**: $45.11 $67.31 $89.51
- **Level 6**: $47.94 $71.56 $95.17

### Decking

4 tens may be worked Monday thru Thursday @ straight time. If bad weather, Friday may be a make up day. If holiday celebrated on a Monday, 4 10s may be worked Tuesday thru Friday. Work in excess of 12 hours per day must be paid @ double time.

#### Apprentice Rates:
- **Level 1 & 2**: $36.05 $54.01 $71.97
- **Level 3**: $38.88 $58.26 $77.63
- **Level 4**: $41.70 $62.49 $83.27
- **Level 5**: $44.53 $66.73 $88.93
- **Level 6**: $47.36 $70.98 $94.59
- **Level 7**: $50.18 $75.20 $100.23
- **Level 8**: $53.01 $79.46 $105.89

### Structural, ornamental, welder and pre-cast

4 tens may be worked Monday thru Thursday @ straight time. If bad weather, Friday may be a make up day. If holiday celebrated on a Monday, 4 10s may be worked Tuesday thru Friday. Work in excess of 12 hours per day must be paid @ double time.

#### Apprentice Rates:
- **Levels 1 & 2**: $36.05 $54.01 $71.97
- **Level 3**: $38.88 $58.26 $77.63
- **Level 4**: $41.70 $62.49 $83.27
- **Level 5**: $44.53 $66.73 $88.93
- **Level 6**: $47.36 $70.98 $94.59
- **Level 7**: $50.18 $75.20 $100.23
- **Level 8**: $53.01 $79.46 $105.89
Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 3/4/2015
Contract must be awarded by: 6/2/2015

<table>
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<tr>
<th>Classification</th>
<th>Name</th>
<th>Description</th>
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<th>Straight Time and a Half Hourly Provision</th>
<th>Double Time Provision</th>
<th>Overtime Provision</th>
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</table>

- Friday for bad weather when 4 tens scheduled for M-Th. If holiday celebrated on M, 4 tens may be worked T-F. Work in excess of 12 hours per day must be paid @ double time.

Laborer

- Construction Laborer, Demolition Laborer, Mason Tender, Carpenter Tender, Drywall Handler, Concrete Laborer, Cement Finisher Tender, Concrete Chute, and Concrete Bucket Handler

<table>
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<th>7/15/2013</th>
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<th>$80.33</th>
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- Tender, Carpenter Tender, Drywall Handler, Concrete Laborer, Cement Finisher Tender, Concrete Chute, and Concrete Bucket Handler

If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8

- Make up day allowed | comment |

- Saturday

Apprentice Rates:

- 0-1,000 work hours: $37.60 $53.03 $68.45
- 1,001 - 2,000 work hours: $38.79 $54.81 $70.83
- 2,001 - 3,000 work hours: $39.98 $56.60 $73.21
- 3,001 - 4,000 work hours: $42.35 $60.15 $77.95

Signal Man (on sewer & caisson work), Air, Electric or Gasoline Tool Operator, Concrete vibrator Operator, Acetylene Torch & Air Hammer Operator; Scaffold Builder, Caisson Worker

<table>
<thead>
<tr>
<th>Signal Man</th>
<th>L33401-B-SB</th>
<th>7/16/2013</th>
<th>$43.80 $62.33</th>
<th>$80.85</th>
<th>H H H H D D Y</th>
</tr>
</thead>
</table>

- If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8

- Make up day allowed | comment |

- Saturday

Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

#### Page 11 of 33

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Hourly</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnace Battery Heater Tender, Burning Bar &amp; Oxy-Acetylene Gun</td>
<td>L33401-D-HH 7/16/2013</td>
<td>$44.04</td>
<td>$62.69</td>
<td>$81.33</td>
<td>H H H H H Y</td>
</tr>
<tr>
<td>Expediter Man, Top Man and/or Bottom Man (Blast Furnace Work or Battery Work)</td>
<td>L33401-E-EX 7/16/2013</td>
<td>$44.79</td>
<td>$63.81</td>
<td>$82.83</td>
<td>H H H H H Y</td>
</tr>
<tr>
<td>Cleaner/Sweeper Laborer; Furniture Laborer</td>
<td>L33401-F-CL 7/16/2013</td>
<td>$38.09</td>
<td>$53.76</td>
<td>$69.43</td>
<td>H H H H H Y</td>
</tr>
<tr>
<td>Lansing Burner, Blaster &amp; Powder Man; Air, Electric or Gasoline Tool Operator (Blast Furnace Work or Battery Work)</td>
<td>L334C 7/16/2013</td>
<td>$44.29</td>
<td>$63.06</td>
<td>$81.83</td>
<td>X X H H H Y</td>
</tr>
</tbody>
</table>

If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays.

Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8 hours of work on Saturdays @ straight time.

*Make up day allowed*  
**Comment:** Saturday

**Official Request #:** 277  
**Requestor:** Wayne State University  
**Project Description:** Cohn Building - Fire Alarm System Upgrade

<table>
<thead>
<tr>
<th>Project Number: 048-251652</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>County:</strong> Wayne</td>
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</tbody>
</table>

**Official Rate Schedule**  
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Plasterer Tender, Plastering Machine Operator

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
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<th>Overtime Provision</th>
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<tr>
<td></td>
<td>LPT-1</td>
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<td>$43.54</td>
<td>$61.94</td>
<td>$80.33</td>
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If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8 Saturday

**Apprentice Rates:**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Straight Time</th>
<th>Half Time</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1,000 hours</td>
<td>$37.60</td>
<td>$53.03</td>
<td>$68.45</td>
<td></td>
</tr>
<tr>
<td>1,001 - 2,000 hours</td>
<td>$38.79</td>
<td>$54.81</td>
<td>$70.83</td>
<td></td>
</tr>
<tr>
<td>2,001 - 3,000 hours</td>
<td>$39.98</td>
<td>$56.60</td>
<td>$73.21</td>
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</tr>
<tr>
<td>3,001 - 4,000 hours</td>
<td>$42.35</td>
<td>$60.15</td>
<td>$77.95</td>
<td></td>
</tr>
</tbody>
</table>

**Laborer - Hazardous**

Class A performing work in conjunction with site preparation and other preliminary work prior to actual removal, handling, or containment of hazardous waste substances not requiring use of personal protective equipment required by state or federal regulations; or a laborer performing work in conjunction with the removal, handling, or containment of hazardous waste substances when use of personal protective equipment level "D" is required.

Make up day allowed comment

4 10s allowed M-Th or T-F; inclement weather makeup day Friday

**Apprentice Rates:**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Straight Time</th>
<th>Half Time</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1,000 work hours</td>
<td>$37.60</td>
<td>$53.03</td>
<td>$68.45</td>
<td></td>
</tr>
<tr>
<td>1,001-2,000 work hours</td>
<td>$38.79</td>
<td>$54.81</td>
<td>$70.83</td>
<td></td>
</tr>
<tr>
<td>2,001-3,000 work hours</td>
<td>$39.98</td>
<td>$56.60</td>
<td>$73.21</td>
<td></td>
</tr>
<tr>
<td>3,001-4,000 work hours</td>
<td>$42.35</td>
<td>$60.15</td>
<td>$77.95</td>
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</tbody>
</table>
### Classification

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<th>Straight Time and a Half</th>
<th>Double Time</th>
<th>Overtime Provision</th>
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</thead>
<tbody>
<tr>
<td><strong>Class B performing work in conjunction with the removal, handling, or containment of hazardous waste substances when the use of personal protective equipment levels &quot;A&quot;, &quot;B&quot; or &quot;C&quot; is required.</strong></td>
<td>LHAZ-Z1-B 11/7/2014</td>
<td>$44.54</td>
<td>$63.44</td>
<td>$82.33</td>
<td>H H H H H H H Y</td>
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</table>

Make up day allowed comment
4 10s allowed M-Th or T-F; inclement weather makeup day Friday

**Apprentice Rates:**

<table>
<thead>
<tr>
<th>Work Hours</th>
<th>Straight Time</th>
<th>Half Hourly</th>
<th>Double Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1,000 work hours</td>
<td>$38.36</td>
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<td>$69.97</td>
</tr>
<tr>
<td>1,001-2,000 work hours</td>
<td>$39.59</td>
<td>$56.01</td>
<td>$72.43</td>
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<tr>
<td>2,001-3,000 work hours</td>
<td>$40.83</td>
<td>$57.87</td>
<td>$74.91</td>
</tr>
<tr>
<td>3,001-4,000 work hours</td>
<td>$43.30</td>
<td>$61.58</td>
<td>$79.85</td>
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</table>

### Laborer Underground - Tunnel, Shaft & Caisson

**Class I - Tunnel, shaft and caisson laborer, dump man, shanty man, hog house tender, testing man (on gas), and watchman.**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAUCT-Z1-1 9/6/2013</td>
<td>$37.87</td>
<td>$48.66</td>
<td>$59.44</td>
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</tbody>
</table>

**Apprentice Rates:**

<table>
<thead>
<tr>
<th>Work Hours</th>
<th>Straight Time</th>
<th>Half Hourly</th>
<th>Double Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1,000 work hours</td>
<td>$33.05</td>
<td>$41.43</td>
<td>$49.80</td>
</tr>
<tr>
<td>1,001-2,000 work hours</td>
<td>$34.02</td>
<td>$42.88</td>
<td>$51.74</td>
</tr>
<tr>
<td>2,001-3,000 work hours</td>
<td>$34.98</td>
<td>$44.32</td>
<td>$53.66</td>
</tr>
<tr>
<td>3,001-4,000 work hours</td>
<td>$36.91</td>
<td>$47.21</td>
<td>$57.52</td>
</tr>
</tbody>
</table>

**Class II - Manhole, headwall, catch basin builder, bricklayer tender, mortar man, material mixer, fence erector, and guard rail builder.**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAUCT-Z1-2 9/6/2013</td>
<td>$37.98</td>
<td>$48.82</td>
<td>$59.66</td>
<td>X X X X X X X D Y</td>
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</tr>
</tbody>
</table>

**Apprentice Rates:**

<table>
<thead>
<tr>
<th>Work Hours</th>
<th>Straight Time</th>
<th>Half Hourly</th>
<th>Double Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1,000 work hours</td>
<td>$33.14</td>
<td>$41.56</td>
<td>$49.98</td>
</tr>
<tr>
<td>1,001-2,000 work hours</td>
<td>$34.10</td>
<td>$43.00</td>
<td>$51.90</td>
</tr>
<tr>
<td>2,001-3,000 work hours</td>
<td>$35.07</td>
<td>$44.45</td>
<td>$53.84</td>
</tr>
<tr>
<td>3,001-4,000 work hours</td>
<td>$37.01</td>
<td>$47.37</td>
<td>$57.72</td>
</tr>
</tbody>
</table>
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
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<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Updated</th>
<th>Straight Time and a Hourly</th>
<th>Half Time</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class III - Air tool operator (jack hammer man, bush hammer man and grinding man), first bottom man, second bottom man, cage tender, car pusher, carrier man, concrete man, concrete form man, concrete repair man, cement invert laborer, cement finisher, concrete shoveler, conveyor man, floor man, gasoline and electric tool operator, gunnite man, grout operator, welder, heading dinky man, inside lock tender, pea gravel operator, pump man, outside lock tender, scaffold man, top signal man, switch man, track man, tugger man, utility man, vibrator man, winch operator, pipe jacking man, wagon drill and air track operator and concrete saw operator (under 40 h.p.).</td>
<td>LAUCT-Z1-3 9/6/2013</td>
<td>$38.04</td>
<td>$48.91</td>
<td>$59.78</td>
<td>X X X X X X Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Apprentice Rates:**

- **0-1,000 work hours**
  - $33.18
  - $41.62
  - $50.06
- **1,001-2,000 work hours**
  - $34.15
  - $43.07
  - $52.00
- **2,001-3,000 work hours**
  - $35.12
  - $44.53
  - $53.94
- **3,001-4,000 work hours**
  - $37.07
  - $47.45
  - $57.84

| Class IV - Tunnel, shaft and caisson mucker, bracer man, liner plate man, long haul dinky driver and well point man. | LAUCT-Z1-4 9/6/2013 | $38.22 | $49.18 | $60.14 | X X X X X X D Y |
| | | | | | |

**Apprentice Rates:**

- **0-1,000 work hours**
  - $33.32
  - $41.83
  - $50.34
- **1,001-2,000 work hours**
  - $34.30
  - $43.30
  - $52.30
- **2,001-3,000 work hours**
  - $35.28
  - $44.77
  - $54.26
- **3,001-4,000 work hours**
  - $37.24
  - $47.71
  - $58.18

**Official Request #:** 277  
**Requestor:** Wayne State University  
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**Project Number:** 048-251652  
**County:** Wayne

**Official Rate Schedule**

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### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
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**Page 15 of 33**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name</th>
<th>Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)</td>
<td>LAUCT-Z1-5</td>
<td>9/6/2013</td>
<td>$38.47</td>
<td>$49.56</td>
<td>$60.64 X X X X X X D Y</td>
<td></td>
</tr>
</tbody>
</table>

**Apprentice Rates:**

- 0-1,000 work hours: $33.50 $42.10 $50.70
- 1,001-2,000 work hours: $34.50 $43.60 $52.70
- 2,001-3,000 work hours: $35.49 $45.09 $54.68
- 3,001-4,000 work hours: $37.48 $48.07 $58.66

| Class VI - Dynamite man and powder man. | LAUCT-Z1-6    | 9/6/2013                                                                                                             | $38.80       | $50.05                   | $61.30 X X X X X X D Y |                |

**Apprentice Rates:**

- 0-1,000 work hours: $33.75 $42.47 $51.20
- 1,001-2,000 work hours: $34.76 $43.99 $53.22
- 2,001-3,000 work hours: $35.77 $45.51 $55.24
- 3,001-4,000 work hours: $37.79 $48.53 $59.28

| Class VII - Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes and flagstones. | LAUCT-Z1-7    | 9/6/2013                                                                                                             | $32.08       | $39.97                   | $47.86 X X X X X X D Y |                |

**Apprentice Rates:**

- 0-1,000 work hours: $28.71 $34.91 $41.12
- 1,001-2,000 work hours: $29.38 $35.92 $42.46
- 2,001-3,000 work hours: $30.06 $36.94 $43.82
- 3,001-4,000 work hours: $31.41 $38.97 $46.52

---

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**Issue Date:** 3/4/2015  
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**Page 16 of 33**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Landscape Laborer</strong></td>
<td>Landscape Specialist includes air, gas, and diesel equipment operator, skidsteer (or equivalent), lawn sprinkler installer on landscaping work where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintenance of landscape projects occurs.</td>
<td><strong>LLAN-Z1-A</strong> 6/26/2014 $28.58 $39.49 $50.39 X X X X X H Y</td>
</tr>
<tr>
<td></td>
<td>Sundays paid at time &amp; one half. Holidays paid at double time.</td>
<td></td>
</tr>
</tbody>
</table>

| **Skilled Landscape Laborer:** small power tool operator, lawn sprinkler installers' tender, material mover, truck driver when seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintaining of landscape projects occurs. | **LLAN-Z1-B** 6/26/2014 $24.36 $33.16 $41.95 X X X X X H Y |
| | Sundays paid at time & one half. Holidays paid at double time. | |

| **Marble Finisher** | Marble Finisher | **BR1-MF** 10/20/2014 $43.48 $54.29 $65.10 H H D D D D D |
| | A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday. | |

#### Apprentice Rates:

<table>
<thead>
<tr>
<th>Level</th>
<th>Straight Time and a Half</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>$19.04</td>
<td>$25.12</td>
<td>$31.20</td>
</tr>
<tr>
<td>Level 2</td>
<td>$20.24</td>
<td>$26.92</td>
<td>$33.60</td>
</tr>
<tr>
<td>Level 3</td>
<td>$27.01</td>
<td>$33.96</td>
<td>$40.90</td>
</tr>
<tr>
<td>Level 4</td>
<td>$28.47</td>
<td>$36.14</td>
<td>$43.82</td>
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<tr>
<td>Level 5</td>
<td>$29.99</td>
<td>$37.84</td>
<td>$45.70</td>
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<tr>
<td>Level 6</td>
<td>$31.61</td>
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<td>Level 7</td>
<td>$33.30</td>
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<tr>
<td>Level 8</td>
<td>$34.79</td>
<td>$43.48</td>
<td>$52.17</td>
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<th>Last Updated</th>
<th>Straight Time and a Half Hourly</th>
<th>Double Time</th>
<th>Overtime Provision</th>
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<tbody>
<tr>
<td>Marble Mason</td>
<td>Marble Mason</td>
<td>BR1-MM 10/17/2014</td>
<td>$50.29 $64.51 $78.72</td>
<td>H H H D D D Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apprentice Rates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
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<td>$25.14 $32.65 $40.15</td>
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<td>$38.42 $48.17 $57.92</td>
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<tr>
<td>Level 6</td>
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<td></td>
<td>$42.07 $53.56 $65.05</td>
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<tr>
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<td></td>
<td>$42.74 $54.38 $66.02</td>
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<tr>
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<td>$43.67 $55.78 $67.88</td>
<td></td>
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<tr>
<td>Operating Engineer</td>
<td>Crane with boom &amp; jib or leads 120' or longer</td>
<td>EN-324-A120 6/12/2014</td>
<td>$57.11 $74.62 $92.13</td>
<td>X X H H D D D Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>comment</td>
<td></td>
<td>Double time after 12 hours M-F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crane with boom &amp; jib or leads 140' or longer</td>
<td>EN-324-A140 6/12/2014</td>
<td>$57.93 $75.85 $93.77</td>
<td>X X H H D D D Y</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Work in excess of 12 per day M-F shall be paid at double time.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crane with boom &amp; jib or leads 220' or longer</td>
<td>EN-324-A220 6/12/2014</td>
<td>$58.23 $76.30 $94.37</td>
<td>X X H H D D D Y</td>
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<tr>
<td></td>
<td>Work in excess of 12 per day M-F shall be paid at double time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crane with boom &amp; jib or leads 300' or longer</td>
<td>EN-324-A300 6/12/2014</td>
<td>$59.73 $78.55 $97.37</td>
<td>X X H H D D D Y</td>
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<tr>
<td></td>
<td>Work in excess of 12 per day M-F shall be paid at double time.</td>
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</tbody>
</table>
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

---

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
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<th>Straight Time and a Half Hourly</th>
<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crane with boom &amp; jib or leads 400' or longer</td>
<td>EN-324-A400 6/12/2014</td>
<td>$61.23</td>
<td>$80.80</td>
<td>$100.37</td>
<td>X X H D D D Y</td>
</tr>
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</table>

Work in excess of 12 per day M-F shall be paid at double time.

| Compressor or welding machine | EN-324-CW 6/12/2014 | $46.26 | $58.35 | $70.43 | X X H D D D Y |

Work in excess of 12 per day M-F shall be paid at double time.

| Forklift, lull, extend-a-boom forklift | EN-324-FL 6/12/2014 | $53.57 | $69.31 | $85.05 | X X H D D D Y |

Work in excess of 12 per day M-F shall be paid at double time.

| Fireman or oiler | EN-324-FO 6/12/2014 | $45.23 | $56.80 | $68.37 | X X H D D D Y |

Work in excess of 12 per day M-F shall be paid at double time.

| Regular crane, job mechanic, concrete pump with boom | EN-324-RC 6/12/2014 | $56.25 | $73.33 | $90.41 | X X H D D D Y |

Work in excess of 12 per day M-F shall be paid at double time.

| Regular engineer, hydro-excavator, remote controlled concrete breaker | EN-324-RE 6/12/2014 | $55.28 | $71.88 | $88.47 | X X H D D D Y |

Work in excess of 12 per day M-F shall be paid at double time.

---

**Apprentice Rates:**

- 0-999 hours: $44.32, $55.94, $67.55
- 1,000-1,999 hours: $45.99, $58.45, $70.89
- 2,000-2,999 hours: $47.64, $60.92, $74.19
- 3,000-3,999 hours: $49.30, $63.41, $77.51
- 4,000-4,999 hours: $50.96, $65.90, $80.83
- 5,000-5,999 hours: $52.62, $68.39, $84.15

**Official Rate Schedule**

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

---

*Official Request #: 277*  
*Requestor: Wayne State University*  
*Project Description: Cohn Building - Fire Alarm System Upgrade*  
*Project Number: 048-251652*  
*County: Wayne*
## Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

### Prevaling Wage Rate Schedule

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Hourly</th>
<th>Half Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Engineer</td>
<td>DIVER</td>
<td>GLF D</td>
<td>$52.80</td>
<td>$105.60</td>
</tr>
<tr>
<td>Operating Engineer</td>
<td>Marine Construction</td>
<td>GLF-1</td>
<td>$65.00</td>
<td>$104.70</td>
</tr>
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</table>

- **Make up day allowed**

- **Subdivision of county:** all Great Lakes, islands therein, & connecting & tributary waters

- **Holiday pay = $120.80 per hour, wages &**

- **Make up day allowed**

- **Subdivision of county:** All Great Lakes, islands therein, & connecting & tributary waters

- **Holiday pay = $123.30**

- **Make up day allowed**

- **Subdivision of county:** All Great Lakes, islands therein, & connecting & tributary waters

- **Holiday pay = $110.30 per hour, wages &**

- **Make up day allowed**

- **Subdivision of county:** All Great Lakes, islands therein, & connecting & tributary waters

---

**Official Request #: 277**

Requestor: Wayne State University  
Project Description: Cohn Building - Fire Alarm System Upgrade  
Project Number: 048-251652  
County: Statewide

---

**Official Rate Schedule**

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

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Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 3/4/2015
Contract must be awarded by: 6/2/2015

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<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Deck Equipment Operator, (Machineryman/Fireman), (4 equipment units or more), Off Road Trucks, Deck Hand, Tug Engineer, &amp; Crane Maintenance 50 ton capacity and under or Backhoe 115,000 lbs or less, Assistant Tug Operator</td>
<td>GLF-4 2/12/2014</td>
<td>$53.60</td>
<td>$67.75</td>
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<tr>
<td>Holiday pay = $96.05 per hour, wages &amp; fringes</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Make up day allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subdivision of county</td>
<td>All Great Lakes, islands therein, &amp; connecting &amp; tributary waters</td>
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Operating Engineer Steel Work

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<thead>
<tr>
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<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Provision</th>
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</thead>
<tbody>
<tr>
<td>Forklift, 1 Drum Hoist</td>
<td>EN-324-ef 9/5/2014</td>
<td>$58.16</td>
<td>$76.37</td>
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<tr>
<td>Make up day allowed</td>
<td>comment</td>
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<tr>
<td>4 10s allowed M-Th with Friday makeup day because of bad weather</td>
<td></td>
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<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
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</thead>
<tbody>
<tr>
<td>Crane w/ 120' boom or longer</td>
<td>EN-324-SW120 9/5/2014</td>
<td>$60.86</td>
<td>$80.42</td>
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<tr>
<td>Make up day allowed</td>
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<tr>
<td>4 10s allowed M-Th with Friday makeup day because of bad weather</td>
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<th>Name Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Crane w/ 120' boom or longer w/ Oiler</td>
<td>EN-324-SW120-O 9/5/2014</td>
<td>$61.86</td>
<td>$81.92$101.98 H H D H H D H D</td>
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<tr>
<td>Make up day allowed</td>
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</thead>
<tbody>
<tr>
<td>Crane w/ 140' boom or longer</td>
<td>EN-324-SW140 9/5/2014</td>
<td>$62.04</td>
<td>$82.19</td>
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<tr>
<td>Make up day allowed</td>
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<tr>
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</thead>
<tbody>
<tr>
<td>Crane w/ 140' boom or longer W/ Oiler</td>
<td>EN-324-SW140-O 9/5/2014</td>
<td>$63.04</td>
<td>$83.69$104.34 H H D H H D D</td>
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<td>4 10s allowed M-Th with Friday makeup day because of bad weather</td>
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</tr>
</thead>
<tbody>
<tr>
<td>Boom &amp; Jib 220' or longer</td>
<td>EN-324-SW220 9/5/2014</td>
<td>$62.31</td>
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<th>Last Updated</th>
<th>Straight Time and a Half Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crane w/ 220' boom or longer w/ Oiler</td>
<td>EN-324-SW220-O 9/5/2014</td>
<td>$63.31</td>
<td>$84.10$104.88 H H D H H D D</td>
</tr>
<tr>
<td>Make up day allowed</td>
<td>comment</td>
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<td></td>
</tr>
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Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne
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<tr>
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<th>Double Time</th>
<th>Overtime Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom &amp; Jib 300' or longer</td>
<td>EN-324-SW300 9/5/2014</td>
<td>$63.81</td>
<td>$84.85</td>
<td>$105.88</td>
<td>H H D H H D D Y</td>
</tr>
<tr>
<td>Crane w/ 300' boom or longer w/ Oiler</td>
<td>EN-324-SW300-O</td>
<td>$64.81</td>
<td>$86.35$107.88</td>
<td>H H D H H D D</td>
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<tr>
<td>Boom &amp; Jib 400' or longer</td>
<td>EN-324-SW400 9/5/2014</td>
<td>$65.31</td>
<td>$87.10</td>
<td>$108.88</td>
<td>H H D H H D D Y</td>
</tr>
<tr>
<td>Crane w/ 400' boom or longer w/ Oiler</td>
<td>EN-324-SW400-O</td>
<td>$66.31</td>
<td>$88.60$110.88</td>
<td>H H D H H D D</td>
<td></td>
</tr>
<tr>
<td>Crane Operator, Job Mechanic, 3 Drum Hoist &amp; Excavator</td>
<td>EN-324-SWCO 9/5/2014</td>
<td>$60.50</td>
<td>$79.88</td>
<td>$99.26</td>
<td>H H D H H D D Y</td>
</tr>
</tbody>
</table>

**Apprentice Rates:**

- 0-999 hours: $47.87 $61.43 $75.00
- 1,000-1,999 hours: $49.81 $64.35 $78.88
- 2,000-2,999 hours: $51.74 $67.24 $82.74
- 3,000-3,999 hours: $53.68 $70.15 $86.62
- 4,000-4,999 hours: $55.62 $73.07 $90.50
- 5,000 hours: $57.56 $75.97 $94.38

| Crane Operator w/ Oiler | EN-324-SWCO-O 9/5/2014 | $61.50       | $81.38$101.26            | H H D H H D |
| Compressor or Welder Operator | EN-324-SW CW 9/5/2014 | $53.15       | $68.86                   | $84.56      | H H D H H D D Y    |

Make up day allowed comment

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# Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015

**Contract must be awarded by:** 6/2/2015

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EN-324-SWHO</td>
<td>9/5/2014</td>
<td>$59.86</td>
<td>$78.92</td>
<td>$97.98</td>
</tr>
<tr>
<td></td>
<td>Hoisting Operator, 2 Drum Hoist, &amp; Rubber Tire Backhoe</td>
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<td></td>
<td></td>
<td>H H D H H D Y</td>
</tr>
<tr>
<td></td>
<td>Make up day allowed</td>
<td>comment</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>4 10s allowed M-Th with Friday makeup day because of bad weather</td>
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</tr>
</tbody>
</table>

|                | EN-324-SWO      | 9/5/2014     | $51.64                    | $66.59      | $81.54             |
|                | Oiler           |             |                           |             | H H D H H D Y |
|                | Make up day allowed | comment | | | |
|                | 4 10s allowed M-Th with Friday makeup day because of bad weather |

|                | EN-324-SWTD50   | 9/5/2014     | $61.59                    | $81.52      | $101.44            |
|                | Tower Crane & Derrick where work is 50' or more above first level | | | | H D H H D D Y |
|                | Make up day allowed | comment | | | |
|                | 4 10s allowed M-Th with Friday makeup day because of bad weather |

|                | EN-324-SWTD50-O | 9/5/2014     | $62.59                    | $83.02      | $103.44            |
|                | Tower Crane & Derrick 50' or more w/ Oiler where work station is 50' or more above first | | | | H D H H D D Y |
|                | Make up day allowed | comment | | | |
|                | 4 10s allowed M-Th with Friday makeup day because of bad weather |

### Operating Engineer Underground

<table>
<thead>
<tr>
<th>Classification</th>
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<th>Overtime Provision</th>
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<td>EN-324A1-UC1</td>
<td>10/14/2014</td>
<td>$51.74</td>
<td>$66.98</td>
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<td>Operating Engineer Underground</td>
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<td>H H H H H H D Y</td>
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</tbody>
</table>

#### Apprentice Rates:

- 0-999 hours $41.79 $52.45 $63.12
- 1,000-1,999 hours $43.32 $54.75 $66.18
- 2,000-2,999 hours $44.84 $57.03 $69.22
- 3,000-3,999 hours $46.36 $59.31 $72.26
- 4,000-4,999 hours $47.89 $61.61 $75.32
- 5,000-5,999 hours $49.41 $63.89 $78.36

<table>
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<tr>
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<th>Double Time</th>
<th>Overtime Provision</th>
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<tbody>
<tr>
<td></td>
<td>EN-324A1-UC2</td>
<td>10/14/2014</td>
<td>$47.01</td>
<td>$59.89</td>
<td>$72.76</td>
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<td>Class II Equipment</td>
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<thead>
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<tbody>
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<td>EN-324A1-UC3</td>
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<td>Class III Equipment</td>
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Official Request #: 277

Requestor: Wayne State University

Project Description: Cohn Building - Fire Alarm System Upgrade

Project Number: 048-251652

County: Wayne

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
## Official 2015 Prevailing Wage Rates for State Funded Projects

### Issue Date: 3/4/2015

### Contract must be awarded by: 6/2/2015

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<th>Updated</th>
<th>Straight Time and a Half Overtime Provision</th>
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</thead>
<tbody>
<tr>
<td>Class IV Equipment</td>
<td>EN-324A1-UC4</td>
<td>10/14/2014</td>
<td>$45.71 $57.94 $70.16 H H H H H D Y</td>
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<td>Master Mechanic</td>
<td>EN-324A1-UMM</td>
<td>10/14/2014</td>
<td>$51.99 $67.81 $83.63 H H H H H D</td>
</tr>
</tbody>
</table>

**Painter**

- Painter (8 hours of repaint work performed on Sunday shall be paid time & one half rate)
  - PT-22-P 10/8/2014 $42.82 $55.63 $68.43 H H D H D D Y

- Four 10s allowed Monday-Thursday with Friday makeup day if job down due to weather, holiday or other conditions beyond the control of the employer.
  - Make up day allowed comment
  - Fridays for bad weather or holidays

**Apprentice Rates:**

- First 6 months $30.02 $36.43 $42.83
- Second 6 months $33.86 $42.19 $50.51
- Third 6 months $35.14 $44.11 $53.07
- Fourth 6 months $36.42 $46.03 $55.63
- Fifth 6 months $37.70 $47.95 $58.19
- Final 6 months $38.98 $49.87 $60.75

**Pipe and Manhole Rehab**

- General Laborer for rehab work or normal cleaning and CCTV work-top man, scaffold man, CCTV assistant, jetter-vac assistant
  - TM247 10/15/2012 $27.20 $36.70 H H H H H H N

- Tap cutter/CCTV Tech/Grout Equipment
  - Operator: unit driver and operator of CCTV; grouting equipment and tap cutting equipment
  - TM247-2 10/15/2012 $31.70 $43.45 H H H H H H N

**Official Request #:** 277

- Requester: Wayne State University
- Project Description: Cohn Building - Fire Alarm System Upgrade
- Project Number: 048-251652
- County: Statewide

**Official Rate Schedule**

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Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015
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</tr>
</thead>
<tbody>
<tr>
<td>CCTV Technician/Combo Unit Operator</td>
<td>unit driver and operator of cctv unit or combo unit in connection with normal cleaning and televising work</td>
<td>TM247-3</td>
<td>10/15/2012</td>
<td>$30.45</td>
<td>$41.57</td>
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<tr>
<td>Boiler Operator</td>
<td>unit driver and operator of steam/water heater units and all ancillary equipment associated</td>
<td>TM247-4</td>
<td>10/15/2012</td>
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<td>$44.20</td>
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<tr>
<td>Combo Unit driver &amp; Jetter-Vac Operator</td>
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<td>TM247-5</td>
<td>10/15/2012</td>
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<td>$44.20</td>
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<tr>
<td>Pipe Bursting &amp; Slip-lining Equipment Operator</td>
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<td>TM247-6</td>
<td>10/15/2012</td>
<td>$33.20</td>
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<td>Pipefitter</td>
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<td>PF-636</td>
<td>6/30/2014</td>
<td>$66.73</td>
<td>$87.93</td>
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**Apprentice Rates:**

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**Comment:**

Four 10s allowed during the week preceding, following and/or the week of a holiday.

**Official Request #: 277**
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne

**Official Rate Schedule**

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
Official 2015 Prevailing Wage Rates for State Funded Projects

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<th>Classification</th>
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Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Page 25 of 33
Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 3/4/2015
Contract must be awarded by: 6/2/2015

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<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
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<td>$41.87 $52.40 $63.44</td>
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<td>Sewer Relining</td>
<td>Class I-Operator of audio visual CCTV system including remote in-ground cutter and other equipment used in conjunction with CCTV</td>
<td>SR-I</td>
<td>11/3/2014</td>
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Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Statewide

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
## Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

### Classification

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<tr>
<th>Classification</th>
<th>Name Description</th>
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<td>1st &amp; 2nd Periods Indentured after 6-1-11</td>
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**Official Request #:** 277  
**Requestor:** Wayne State University  
**Project Description:** Cohn Building - Fire Alarm System Upgrade  
**Project Number:** 048-251652  
**County:** Wayne

---

**Official Rate Schedule**

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

---

**Page 27 of 33**
## Official 2015 Prevailing Wage Rates for State Funded Projects

### Issue Date: 3/4/2015

### Contract must be awarded by: 6/2/2015

### Page 28 of 33

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
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<th>Straight Time and a Half</th>
<th>Double Time</th>
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4 ten hour days allowed Monday-Friday

Double time pay due after 12 hours worked M-F

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<th>3rd</th>
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### Terrazzo

| Terrazzo Finisher | BR1-TRF | 10/17/2014 | $43.97 | $55.03 | $66.08 | H H D D D D Y |

A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.

### Apprentice Rates:

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<th>Level</th>
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Official Request #: 277
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Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne

Official Rate Schedule

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**Official 2015 Prevailing Wage Rates for State Funded Projects**

**Issue Date:** 3/4/2015

**Contract must be awarded by:** 6/2/2015

**Wayne State University**

**Cohn Building Fire Alarm System Upgrade**

**WSU Project No. 048-251652**

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A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.

**Apprentice Rates:**

- **Level 1**
  - $25.14 $32.65 $40.15
- **Level 2**
  - $28.20 $36.49 $44.78
- **Level 3**
  - $33.41 $41.97 $50.53
- **Level 4**
  - $36.15 $45.66 $55.17
- **Level 5**
  - $38.42 $48.17 $57.92
- **Level 6**
  - $42.07 $53.56 $65.05
- **Level 7**
  - $42.74 $54.38 $66.02
- **Level 8**
  - $43.67 $55.78 $67.88

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A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.

**Apprentice Rates:**

- **Level 1**
  - $19.04 $25.12 $31.20
- **Level 2**
  - $20.24 $26.92 $33.60
- **Level 3**
  - $27.01 $33.96 $40.90
- **Level 4**
  - $28.47 $36.14 $43.82
- **Level 5**
  - $29.99 $37.84 $45.70
- **Level 6**
  - $31.61 $39.86 $48.10
- **Level 7**
  - $33.30 $41.59 $49.87
- **Level 8**
  - $34.79 $43.48 $52.17

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**Official Request #: 277**

**Requestor:** Wayne State University

**Project Description:** Cohn Building - Fire Alarm System Upgrade

**Project Number:** 048-251652

**County:** Wayne

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**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

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<th>Name</th>
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<th>Overtime Provision</th>
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<td>$49.68</td>
<td>$63.59</td>
<td>$77.50</td>
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</tbody>
</table>

A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.

### Apprentice Rates:

- **Level 1:** $25.14  
- **Level 2:** $28.20  
- **Level 3:** $33.41  
- **Level 4:** $36.15  
- **Level 5:** $38.42  
- **Level 6:** $42.07  
- **Level 7:** $42.74  
- **Level 8:** $43.67

### Truck Driver

- **on all trucks of 8 cubic yard capacity or less (except dump trucks of 8 cubic yard capacity or over, tandem axle trucks, transit mix and semis, euclid type equipment, double bottoms and low boys):**
  
  **TM-RB1** 8/8/2013  
  $41.92  
  $37.85  
  H H H H H H H Y

- **of all trucks of 8 cubic yard capacity or over:**
  
  **TM-RB1A** 8/8/2013  
  $41.30  
  $38.00  
  H H H H H H H Y

- **on euclid type equipment (Make up day allowed):**
  
  **TM-RB1B** 8/8/2013  
  $41.45  
  $38.23  
  H H H H H H H Y

---

**Official Request #:** 277  
**Requestor:** Wayne State University  
**Project Number:** 048-251652  
**County:** Wayne  

**Official Rate Schedule**

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time Hourly</th>
<th>Half Time Hourly</th>
<th>Double Time Hourly</th>
<th>Overtime Provision</th>
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<tbody>
<tr>
<td>Underground Laborer Open Cut, Class I</td>
<td>Construction Laborer</td>
<td>9/5/2013</td>
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<td>Underground Laborer Open Cut, Class II</td>
<td>Mortar and material mixer, concrete form man, signal man, well point man, manhole</td>
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<td>$37.83</td>
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<td>and catch basin builder, guard rail builders, headwall, seawall, breakwall, dock builder and fence erect.</td>
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<td>$41.38</td>
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<tr>
<td>Underground Laborer Open Cut, Class III</td>
<td>Air, gasoline and electric tool operator, vibrator operator, drillers, pump man</td>
<td>9/5/2013</td>
<td>$37.88</td>
<td>$48.67</td>
<td>$59.46</td>
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<td>, tar kettle operator, bracers, rodder, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars, etc.), cement finisher, welder, pipe jacking and boring man, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger man, and directional boring man.</td>
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</tbody>
</table>

Official Request #: 277
Requestor: Wayne State University
Project Description: Cohn Building - Fire Alarm System Upgrade
Project Number: 048-251652
County: Wayne

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Page 31 of 33
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Official Request #: 277**  
Requestor: Wayne State University  
Project Description: Cohn Building - Fire Alarm System Upgrade  
Project Number: 048-251652  
County: Wayne

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

#### Page 32 of 33

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Updated Date</th>
<th>Straight Time Hourly</th>
<th>Half Time Hourly</th>
<th>Double Time Hourly</th>
<th>Overtime Provision</th>
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<tbody>
<tr>
<td>Underground Laborer Open Cut, Class IV</td>
<td>Trench or excavating grade man.</td>
<td>9/5/2013</td>
<td>$37.96</td>
<td>$48.79</td>
<td>$59.62</td>
<td>X X X X X X D Y</td>
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<td></td>
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</tr>
<tr>
<td>0-1,000 work hours</td>
<td>$33.12</td>
<td>$41.53</td>
<td>$49.94</td>
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<td>1,001-2,000 work hours</td>
<td>$34.09</td>
<td>$42.99</td>
<td>$51.88</td>
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<td>2,001-3,000 work hours</td>
<td>$35.06</td>
<td>$44.44</td>
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<tr>
<td>3,001-4,000 work hours</td>
<td>$36.99</td>
<td>$47.33</td>
<td>$57.68</td>
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</tbody>
</table>

| Underground Laborer Open Cut, Class V | Pipe Layer | 9/5/2013 | $38.02 | $48.88 | $59.74 | X X X X X X D Y |
| Apprentice Rates: | | | | | | |
| 0-1,000 work hours | $33.16 | $41.59 | $50.02 |
| 1,001-2,000 work hours | $34.14 | $43.06 | $51.98 |
| 2,001-3,000 work hours | $35.11 | $44.51 | $53.92 |
| 3,001-4,000 work hours | $37.05 | $47.43 | $57.80 |

| Underground Laborer Open Cut, Class VI | Grouting man, top man assistant, audio visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances. | 9/5/2013 | $35.47 | $45.06 | $54.64 | X X X X X X D Y |
| Apprentice Rates: | | | | | | |
| 0-1,000 work hours | $31.25 | $38.73 | $46.20 |
| 1,001-2,000 work hours | $32.10 | $40.00 | $47.90 |
| 2,001-3,000 work hours | $32.94 | $41.26 | $49.58 |
| 3,001-4,000 work hours | $34.63 | $43.79 | $52.96 |

---

**Official Rate Schedule**  
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.
### Official 2015 Prevailing Wage Rates for State Funded Projects

**Issue Date:** 3/4/2015  
**Contract must be awarded by:** 6/2/2015

<table>
<thead>
<tr>
<th>Classification</th>
<th>Name Description</th>
<th>Last Updated</th>
<th>Straight Time and a Half Time Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underground Laborer Open Cut, Class VII</td>
<td>Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes, flagstones etc.</td>
<td>9/5/2013</td>
<td>$32.09 $39.99 $47.88 X X X X X X D Y</td>
</tr>
</tbody>
</table>

**Apprentice Rates:**

- 0-1,000 work hours: $28.72 $34.93 $41.14
- 1,001-2,000 work hours: $29.39 $35.93 $42.48
- 2,001-3,000 work hours: $30.07 $36.95 $43.84
- 3,001-4,000 work hours: $31.42 $38.98 $46.54
WAYNE STATE UNIVERSITY
PAYMENT PACKAGE DOCUMENT REQUIREMENTS (Revised 5-06-2011):

Review and comply with Section 410 of Bid Front End Documents.
Review and comply with Article 15 of the Supplemental General Conditions.

AIA DOCUMENT G702 & G703 – (or facsimile thereof) Payment Application Checklist:
- Correct Project Name – Found on your contract.
- Correct Project Number – Found on your contract.
- Purchase Order Number – Required prior to beginning work.
- Correct Application Number. (i.e. 1, 2, 3, etc.)
- Correct Period Reporting Dates – Applications support docs must be sequential and within application range.
- Approved & Executed Change Orders must be listed. (Cannot invoice for unapproved changes.)
- Schedule of values percentages and amounts match the approved Pencil Copy Review – Signed by the Architect, Contractor, and University Project Manager.
- Correct Dates – Back dating not accepted.
- Signed and Notarized.

SWORN STATEMENT – Checklist:
- List all contractors, sub-contractors, suppliers… ≥ $1000.00
- Contractor’s Sworn Statement amounts must coincide with Column "C" of the schedule of values document. Any unassigned or uncommitted value of contract shall be shown on an entry "Contractor – Unassigned" followed by the amount necessary to cause the “contracted to date” column of the sworn statement to equate with the schedule of value column totals.
- Current Date – Back dating not accepted.
- Signed and Notarized.
A Sworn Statement is required from every Sub Contractor on the job with a material purchase or sub-subcontract of $1,000 or more. (all the way down to the bottom tier)

DEPT. of LABOR FORM WH-347 – Certified Payroll Checklist:
(Union and Non-Union)
- For every contractor & sub-contractors work, for each week within the application for payment reporting period. (For every “boot” on the floor representing the weeks within the application period)
- Wayne State University Project Number – Found on your contract.
- List ALL workers who have worked on the project site.
- Make sure workers addresses are listed.
- NO Social Security Numbers, if present they MUST be blackened out or listed in XXX-XX-1234 format.
- Work classifications based on the job specific Prevailing Wage Schedule descriptions. If you require rates for additional classifications, contact the Michigan Department of Consumer & Industry Services. (Refer to Section 410 of Bid Front End Documents.)
  http://www.cis.state.mi.us/bwuc/bsr/wh/revised_rates/whc_tbl.htm
- Apprenticeship program status – proof of enrolled program and current completion required for any workers paid at Apprenticeship rates.
- Rate of Pay verified against the Prevailing Wage Schedule with an hourly costs breakdown of fringes paid. (Refer to attachment for State of Michigan instructions and example)
- Authorized signatures on affidavit.

APPLICATION PACKAGE SUPPORTING DOCUMENTATION –
Must accompany all package reporting periods: (Union and Non-Union)
- Copies of Pay Stubs may be required for each Certified Payroll period reported – (Social Security Numbers MUST be blackened out or listed in XXX-XX-1234 format. Pay stubs need to reflect claimed participation of fringes like Medical, Dental, Retirement or 1099 classification.)
- Proof of Ownership for any „Owner Operator” (Sole Proprietor) contractors not claiming their time under prevailing wage act. – (Must list their hours and dates worked on the WH-347 Form and enter EXEMPT on the income brackets.). The Owner Operator must provide copies of “DBA” registration form confirming status as exempt from prevailing wage requirements.
- Proof of Stored Materials – (Detailed Bill of Sale, certificate of insurance or endorsement page specifically insuring the stored materials, pictures, when large value. WSU reserves the right to on site verification of material. Stored material must be separated from ordinary inventory and labeled for WSU project.)
o Partial Unconditional Waivers – Must release the accumulated amount paid for work and be immediately provided, or provided with the subsequent application for payment. Waivers shall be provided for contractors, sub-contractors, and suppliers listed on the Sworn Statements. (This is required at all tiers)

o Full Unconditional Waivers – Prime Contractor must deliver fully executed Full Unconditional Waiver upon receipt of final payment. Full Unconditional waivers may be required of sub-contractors and suppliers in advance of final Contractor payment on bonded projects. This requirement shall be determined on a project-by-project basis. Full Unconditional waivers shall be required in advance of or at the time of final payment on all non-bonded projects from all subcontractors and suppliers listed on Sworn Statements, or who have provided a notice of furnishing.

o Partial Conditional Waivers – The Contractor shall provide a Partial Conditional Waivers covering the entire amount of the application for payment. For non-bonded Projects – A partial conditional waiver from all subcontractors must accompany any application for payment within which a subcontractor draw is included.

o Sworn Statements – Required for all Sub Contractors, and Sub-subcontractors (etc.) with any contracts or purchases exceeding $1,000.

**FINAL PAYMENT EXCHANGE – Checklist:**

- Clear and concise As-Built drawings.
- Operation and Maintenance Manuals.
- Required training must be completed (if applicable).
- Warranty of work in accordance with project documents.
- Certificate of Substantial Completion.
- Full Unconditional Waiver

The Project Manager may provide additional requirements as may apply to individual jobs

Revised 5-6-2011
Contractor Performance Evaluation

In an effort to provide continuous process improvement regarding the construction of various university projects, Wayne State University is embarking upon a process of evaluating the contractor’s overall performance following the completion of work. At the conclusion of the construction project a subjective evaluation of the Contractor’s performance will be prepared by the Project Manager and the supervising Director of Construction. The evaluation instrument that will be used in this process is presented below:
## Contractor Evaluation Sheet

**Contractor Name:** __________________________________________

**Project Name:** __________________________________________

**Contractor’s PM:** ________________________________________

**PM Name:** ______________________________________________

**Superintendent:** _________________________________________

**Project Number:** ________________

**PO#:** ________________

**Designer:** ______________________________________________

### EVALUATION SCORING:

1 = Unacceptable, 2 = Less than Satisfactory, 3 = Satisfactory or Neutral, 4 = Good, 5 = Excellent

Note: Comments are REQUIRED if any score is less than 3. Write comments on the back of the evaluation.

### Field Management

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<tr>
<th>Field Management</th>
<th>Score</th>
<th>Weight</th>
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<tr>
<td>1) Work Planning / Schedule:</td>
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<td>2) Compliance with Construction Documents:</td>
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<td>3) Safety Plan &amp; Compliance:</td>
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<td>4) Compliance with WSU procedures:</td>
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<td>5) Effectiveness of Project Supervision:</td>
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<td>6) Project Cleanliness:</td>
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<td>7) Punch List Performance:</td>
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<td>8) Contractor Coordination with WSU Vendors:</td>
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<td>9) Construction Quality:</td>
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### Administrative Management

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### Invoice and Change Management

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<td>Would you work with this team again?</td>
<td>Yes</td>
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### One year follow up

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**Evaluator**

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<th>Date:</th>
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</table>

**Evaluator Name:** __________________________________________

Please Print Rev. 2-17-2015 RGP
We are providing the evaluation instrument at this time to allow the bidder’s to review and understand the criterion that the University’s project management team will use to evaluate the successful bidder’s performance at the conclusion of the project. It is the intent of the university to utilize the results of this evaluation to determine if it will continue to conduct business with the Contractor in future bidding opportunities.

The scoring range is between 100 to 500 points, with 100 being low and 500 being high. Each question has an associated ‘weight’ factor, and the higher the weight; the greater the importance of satisfactory performance on the final score. At the conclusion of the project, and after the Project Manager and the supervising Director has prepared their independent evaluation, the University’s project representative will meet with the Contractor to review the results. Acceptable contractor performance is essential to avoid having the University decline future work with the Contractor. An appeals process is available for Contractor disagreement with evaluation scores.

Contractors engaged in work are encouraged to maintain an open and regular dialog with the Design and Construction Department over the course of the construction project to ensure that the final evaluation is an accurate representation of the Contractor’s performance.
AGREEMENT BETWEEN THE UNIVERSITY AND CONTRACTOR
FOR CONSTRUCTION SERVICES (rev 6-2013)

Executed as of the _____ day of ________, 2014 by and between:

The Board of Governors, Wayne State University
Detroit, Michigan 48202
(The University),

and

CONTRACTOR'S NAME
CONTRACTOR'S ADDRESS

regarding

Cohn Building Fire Alarm System Upgrade 2015
5557 Cass Ave.
WSU Project No. 048-251652
In consideration of the mutual covenants and conditions contained herein, the Parties agree as follows:

**Article 1 - Scope of Work**

1.1 This Agreement provides for **Replacement of the Existing Fire Alarm System**, located at **5557 Cass Ave.** The documents listed in Article 4 fully define the scope of work.

1.2 The Contractor shall furnish all the labor, materials, equipment, services, and supervision to perform all the work shown on the drawings and specifications listed in Article 18, including any addenda issued during the bid phase, and approved change orders issued during the construction phase.

1.3 The Contractor shall notify the University in writing within five (5) calendar days when the Contractor discovers any condition that will affect the contract amount or the completion date.

**Article 2 - Time of Completion**

2.1 The work to be performed under this Agreement shall commence upon the Contractor’s receipt of a fully-executed Agreement, and substantial completion shall be achieved by **October 30, 2015**.

**Article 3 - The Contract Sum**

3.1 The University shall pay the Contractor a "lump sum/not-to-exceed (pick one)" amount of $$$$$$$ ("Amount in words 00" /100 dollars) for the performance of all work associated with the Contractor's Base Bid "and Alternates (List)."

3.2 The University may, at its sole discretion, during the life of the contract, award the following alternates at the amounts indicated: "(If section 3.2 is not used, delete all text and enter Deleted"

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate #1</td>
<td></td>
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<tr>
<td>Alternate #2</td>
<td></td>
</tr>
<tr>
<td>Alternate #3</td>
<td></td>
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</tbody>
</table>

3.3 In the event additional work becomes necessary, the following unit prices will apply: (If section 3.3 is not used, delete all text and enter Deleted)

<table>
<thead>
<tr>
<th>Work Item</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

**Article 4 - The Contract Documents**

4.1 The Contract Documents shall consist of this Agreement, the drawings and specifications as listed in Article 18, the General Conditions of the Contract for Construction as defined by AIA Document A201 1970 Edition, except as otherwise provided herein, and Wayne State University’s Supplementary General Conditions 1997 Edition.

4.2 For any inconsistencies found among or between these Contract Documents, the language contained in this Agreement shall prevail over all other documents and the Supplementary General Conditions shall prevail over the General Conditions. In the event of a conflict between the Drawings and Specifications, the requirement for the higher quantity and/or higher quality shall prevail.

**Article 5 – Examination of Premises**

5.1 The Contractor acknowledges that the University provided the opportunity for a thorough examination of the project site and its surroundings and that the Contractor knows of no conditions preventing accomplishment of the full scope of work within the time and for the amount specified in this Agreement.
5.2 The University will deny all claims for additional time and/or cost for conditions that could have been reasonably discovered during such an examination.

Article 6 - The Architect/Engineer

6.1 The Architect/Engineer for this project is:

"(List the Architect and Engineer separately if appropriate)"

Fishbeck, Thompson, Carr and Huber, Inc.
39500 MacKenzie Drive, Suite 100
Novi, MI 48377
(Architect Phone No / Fax No)

6.2 The University will appoint a Project Manager who will be the University's point of contact for all matters of contract administration including, but not limited to, interpretation of documents, defining the scope of work, approving work schedules, and approving contract payments.

Article 7 - Additional Work

7.1 The University reserves the right to let other Agreements in connection with this work. The Contractor will afford other Contractors or the University's own workforce reasonable opportunity for the delivery and storage of their material and for the performance of their work and shall properly connect and coordinate its work with theirs.

7.2 If any part of the Contractor's work depends for proper execution or results upon the work of another Contractor or the University's own workforce, the Contractor shall inspect and promptly report to the University's Project Manager any defects in such work that render it unsuitable for such proper execution and results. The Contractor's failure to so inspect and report shall constitute an acceptance of the work of others as fit and proper for reception of the Contractor's work and as a waiver of any claim or defense against the University or other contractor which relies in whole or in part upon the contention that such work was unsuitable for proper execution and resolution.

Article 8 – Dispute Resolution

8.1 Jurisdiction over all claims, disputes, and other matters in question arising out of or relating to this contract or the breach thereof, shall rest in the Court of Claims of the State of Michigan. No provision of this agreement may be construed as Wayne State University’s consent to submit any claim, dispute or other matter in question for dispute resolution pursuant to any arbitration or mediation process, whether or not provisions for dispute resolution are included in a document which has been incorporated by reference into this agreement. Specifically, all references to Arbitration contained in the General Conditions are superseded by this Article.

8.2 In any claim or dispute by the Contractor against the University, which cannot be resolved by negotiation, the Contractor shall submit the dispute in writing for an administrative decision by the University's Vice President for Finance and Administration, within 30 days of the end of negotiations. Any decision of the Vice President shall be made within 45 days of receipt from the Contractor and is final unless it is challenged by the Contractor by filing a lawsuit in the Court of Claims of the State of Michigan within one year of the issuance of the decision. The Contractor agrees that appeal to the Vice President is a condition precedent to filing suit in the Michigan Court of Claims.

8.3 For purposes of this section, the "end of negotiations" shall be deemed to have occurred when:

8.3.1 Either party informs the other that pursuant to this section, negotiations are at an impasse; or

8.3.2 The Contractor submits the dispute in writing to the Vice President.
8.4 Unless otherwise agreed by the University in writing, and notwithstanding any other rights or obligations of either of the parties under any Contract Documents or Agreement, the Contractor shall continue with the performance of its services and duties during the pendency of any negotiations or proceedings to resolve any claim or dispute, and the University shall continue to make payments in accordance with the Contract Documents; however, the University shall not be required or obligated to make payments on or against any such claims or disputes during the pendency of any proceeding to resolve such claims or disputes.

**Article 9 - Termination for Convenience**

9.1 Upon thirty days written notice to the Contractor, the University may, without cause and without prejudice to any other right or remedy of the University, elect to terminate the contract. In such case, the Contractor shall only be paid (without duplication of any items), using a Close out Change Order, for the following:

9.1.1 For completed and acceptable work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

9.1.2 For expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted work, including fair and reasonable sums for overhead and profit on such expenses.

9.2 The Contractor shall not be paid on account of loss of anticipated profits or revenue, delay or disruption, or other economic loss arising out of or resulting from such termination. For purposes of this section, “fair and reasonable sums for overhead and profit” shall be determined by reference to Michigan law, without reference to principles used for such determinations in arbitration.

**Article 10 - Progress Payments**

10.1 On or before the 20th day of each month, the Contractor shall submit a written application for payment, using form AIA G702, to the Architect/Engineer and the University’s Project Manager for review. The Architect/Engineer shall have ten (10) calendar days to accept or reject the Contractor’s application for payment. Acceptable applications for payment shall then be submitted to the University for Payment of authorized amount(s) within thirty (30) calendar days of receipt by the University’s Project Manager.

10.2 The application for payment shall contain a full schedule of values organized and sorted by subcontractor, by Construction Specifications Institute standard work categories, or in another format acceptable to the University.

10.3 Monthly progress payments shall show the percentage of work installed as of the date of the application, less amount previously installed and the amount due for the application period. The Contractor shall deduct a 10% retainage from the balance due for each progress payment and indicate the net amount due on each application.

10.4 When 50% of the work associated with this Agreement is installed, the Contractor shall not deduct additional retainage from the balance due from the University. When substantial completion is achieved and acknowledged by the Architect/Engineer, the Contractor and the University in writing, the University shall remit to the Contractor all but 2% of the retainage. The remaining 2% shall be retained by the University until the final payment is authorized and remitted to the Contractor.

**Article 11 - Acceptance and Final Payments**

11.1 Final payment shall be due thirty (30) days after the completion of the work, including all punch list items, provided the work is fully completed and the Agreement fully performed.

11.2 Upon receipt of written notice that the work is ready for final inspection and acceptance, the Architect/Engineer shall promptly inspect the work. When the Architect/Engineer concludes that the work is acceptable and the Agreement to be fully performed, the Architect/Engineer shall promptly issue a final certificate with an original signature, stating that the work provided is complete and acceptable and that the entire remaining balance found to be due the Contractor shall be remitted by the University once the final
application for payment is received.

11.3 If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and the Architect/Engineer so certifies, the University shall, upon certificate of the Architect/Engineer, and without terminating the Contract, make payments of the balance due for that portion of the work fully completed and accepted. Such payments shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**Article 12 - Non-Discrimination**

12.1 The Contractor agrees that it will not discriminate against any employee or applicant for employment, to be employed in the performance of this Agreement, with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, color, religion, sex, age, national origin, or ancestry. Breach of this covenant may be regarded as material breach of this Agreement.

12.2 The Contractor further agrees that it will, in all subcontracts relating to the performance of the work under this Agreement, provide in its subcontracts that the subcontractor will not discriminate against any employee or applicant for employment, to be employed in the performance of such contract, with respect to hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment because of race, sex, age, color, religion, national origin or ancestry. Breach of this covenant may also be regarded as a material breach of this Agreement.

**Article 13 – Laborers and Mechanics**

13.1 All laborers and mechanics must be covered by Worker's Compensation and Employer's Liability Insurance as required by Federal and Michigan law. The Contractor shall also require all of its Subcontractors to maintain this insurance coverage.

13.2 The Contractor acknowledges and shall abide by the University's prohibition on use of 1099 independent contractors and owner / operator business entities. The Contractor shall ensure that all classifications of laborers and construction mechanics performing Work on the Project job site are employees of the Contractor or any Trade Contractor for any tier thereof, and that each worker is covered by workers compensation insurance.

**Article 14 - Prevailing Wages**

14.1 The Contractor and each subcontractor shall pay to each class of mechanics and laborers not less than the wage and fringe benefit rates prevailing in the Detroit Metropolitan Area, as determined by the United States Department of Labor. The Contractor shall post on site, in a conspicuous place, a copy of all applicable wage and benefit rates, and shall provide the University with a copy of the applicable wage and benefit rates.

14.2 The Contractor and each subcontractor shall keep an accurate record showing the name and occupation of and the actual benefits and wages paid to each laborer and mechanic employed in connection with this contract. The Contractor and each subcontractor shall make certified payroll records available to the University's representatives upon request.

14.3 If a Contractor or subcontractor fails to pay the prevailing rates of wages and fringe benefits and does not cure such failure within ten (10) days after notice to do so by the University, the University shall have the right, at its option, to do any or all of the following:

14.3.1 Withhold all or any portion of payments due the Contractor as may be considered necessary by the University to pay laborers and mechanics the difference between the rates of wages and fringe benefits required by this Agreement and the actual wage and fringe benefits paid.

14.3.2 Terminate part or all of this Agreement or any subagreement and proceed to complete the
Agreement or subagreement by separate agreement with another Contractor or otherwise, in which case the Contractor and its sureties shall be liable to the University for any excess costs incurred by the University.

14.4 The Contractor shall include terms identical or substantially similar to this section in any Agreement or subagreement pertaining to the project.

**Article 15 - Save Harmless (Revised 2-2015)**

15.1 To the fullest extent permitted by law, the Contractor shall hold harmless, defend, and indemnify the Board of Governors of Wayne State University, the University, the Architect and Architect’s Consultants, and officers, employees, representatives and agents of each of them, from and against any and all claims or losses arising out of or alleged to be resulting from, or relating to (1) the failure of the Contractor to perform its obligations under the Contract or the performance of its obligation in a willful or negligent manner; (2) the inaccuracy of any representation or warranty by the Contractor given in accordance with or contained in the Contract Documents; and (3) any claim of damage or loss by any subcontractor, or supplier, or laborer against the University, the Architect or the Architect’s consultants arising out of any alleged act or omission of the Contractor or any other subcontractor, or anyone directly or indirectly employed by the Contractor or any subcontractor.

The Contractor shall also be liable for and hereby agrees to pay, reimburse, fully indemnify and hold the University, the Architect and Architect’s Consultants, harmless from and against all costs and expenses of every nature (including attorney fees and expenses incident thereto) incurred by the University in collecting the amounts due from the Contractor, or otherwise enforcing its rights, under the indemnification described in this Article.

**Article 16 - Liquidated Damages**

16.1 It is understood and agreed that, if the project is not completed within the time specified in the Agreement plus any extension of time allowed pursuant thereto, the actual damages sustained by the University because of any such delay will be uncertain and difficult to ascertain, and it is agreed that the reasonable foreseeable value of the use of said project by the University would be the sum of $250.00, Two Hundred Fifty Dollars per day. Therefore, the Contractor shall pay as liquidated damages to the University the sum of $250.00, Two Hundred Fifty Dollars per day for each day’s delay in substantially completing said project beyond the time specified in this Agreement and any extensions of time allowed thereunder.

"ENTER N/A FOR ABOVE AMOUNT IF NO LIQUIDATED DAMAGES"

**Article 17 - Interpretation**

17.1 This Agreement shall be interpreted and construed according to the laws of the State of Michigan.

17.2 If one part of this Agreement is found to be void by legal or legislative action, the remainder of the contract remains in full effect.
**Article 18 - Drawings and Specifications**

18.1 The Technical Specifications and the Project Manual dated **February 24, 2015**, and the following List of Drawings represents the scope of work as defined in the Contract Documents from Article 4.

<table>
<thead>
<tr>
<th>DRAWINGS</th>
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<tbody>
<tr>
<td><strong>Drawing No.:</strong></td>
</tr>
<tr>
<td><strong>General Index</strong></td>
</tr>
<tr>
<td>G101</td>
</tr>
<tr>
<td><strong>Demolition Index</strong></td>
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<tr>
<td>D100</td>
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<tr>
<td>D101</td>
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<tr>
<td>D102</td>
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<td>D103</td>
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<tr>
<td>D104</td>
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<tr>
<td><strong>Electrical Index</strong></td>
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<td>E100</td>
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<td>E101</td>
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<tr>
<td>E102</td>
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<tr>
<td>E103</td>
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<tr>
<td>E104</td>
</tr>
</tbody>
</table>
IN WITNESS WHEREOF the parties to these presents have hereunto set their hands as of the day and year first written above.

Signed, sealed and delivered in the presence of:

CONTRACTOR’S NAME GOES HERE

By__________________________________
signature

Please print name here

____________________________________
Date signed

____________________________________
Title

Witness

THE BOARD OF GOVERNORS of WAYNE STATE UNIVERSITY

By ____________________________________________
Richard J. Nork, Vice President for Finance and Facilities

Date signed

Form Contract Approved by OGC 06/13 – LG
File_reference_here
FORM OF GUARANTEE

PROJECT:  Cohn Building Fire Alarm System Upgrade 2015

OWNER:  BOARD OF GOVERNORS, WAYNE STATE UNIVERSITY

CONTRACTOR:  ______________________________________

DATE:  ______________________________________

Know all men by these presents that, in consideration of my (our) having been awarded the Contract or Subcontract for complete furnishing and installation of:

Cohn Building Fire Alarm System Upgrade 2015 (048-251652)

For:  Board of Governors, Wayne State University

In conformity with drawings and specifications prepared by Architect or Engineer, Fishbeck, Thompson, Carr and Huber, Inc., and known as the buildings indicated above, I (we) do hereby agree that, should I (we) be notified that the said work has proved faulty, etc., that I (we) will return to the buildings within three (3) working days of the receipt of such notice, and will furnish the necessary labor and material to repair such work to the satisfaction of the Owner and without cost to the Owner.

The Agreement shall remain in full force and effect for a one year period (DATE TBD)

WITNESS:

signed:  ______________________________________

Subcontractor

by:  ______________________________________

address:  ______________________________________

city/state/zip:  ______________________________________

signed:  ______________________________________

General Contractor

by:  ______________________________________

(THIS FORM TO BE FILED IN DUPLICATE.)
GENERAL CONDITIONS (Revised 10-2009)

A. Although AIA Document A201 - Twelfth Edition (April 1970) - "General Conditions of the Contract for Construction" is not bound herein, it forms a part of these construction documents.

B. A reference copy of AIA Document A201 - Twelfth Edition (April 1970) - "General Conditions of the Contract for Construction" is on file at the following location:

Wayne State University
Finance & Facilities Management
Procurement & Strategic Sourcing
Academic / Administrative Services Building
5700 Cass Avenue
Detroit Michigan 48202
SUPPLEMENTARY GENERAL CONDITIONS
OF
THE CONTRACT FOR CONSTRUCTION

Facilities Planning & Management - Design & Construction Services
Wayne State University
WSU SUPPLEMENTARY GENERAL CONDITIONS
OF THE
CONTRACT FOR CONSTRUCTION

NOTE: The following items related to A.I.A. General Conditions, A.I.A. Document A-201 - Twelfth Edition (April 1970), by specific number being amended to. These items, as amendments, shall have precedence over the article being amended.

ARTICLE 1 - CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.5 The Agreement
The Agreement executed by the Contractor and the Owner.

1.2 EXECUTION, CORRELATION, INTENT, AND INTERPRETATIONS

1.2.6 "General Conditions and "Supplementary General Conditions" apply with equal force to all Contractors, Subcontractors work, and extra work required under this Contract.

1.2.7 Precedence of Drawings and Specifications.
The Agreement has precedence over WSU Supplementary General Conditions.

WSU Supplementary General Conditions have precedence over A.I.A. A-201 General Conditions of the Contract.

Specifications have precedence over drawings. Full-size drawings have precedence over scale drawings. Large-scale plans and details have precedence over small-scale plans and details. Figured dimensions have precedence over plans and elevations.

ARTICLE 2 - ARCHITECT

2.1 DEFINITION

2.1.1.1 The term Architect or Architect/Engineer as used in these specifications refers to Facilities Planning and Management - Design Services, and/or Consulting Architect/Engineer.

2.2 ADMINISTRATION OF THE CONTRACT

2.2.16 The Architect will assign Field Representatives to make periodic visits to the project for the purpose of assisting the Architect in carrying out his field responsibilities at the site. The duties, responsibilities and limitations of authority of any such Field Representative shall be as follows:

a. Explain Contract Documents: Assist the Contractor via the Contractor's Superintendent to understand the intent of the Contract Documents.

b. Observations: Conduct on-site observations and spot checks of the work in progress as a basis for determining conformance of the work, material, and equipment with the Contract Documents.

c. Additional Information: Obtain from the Architect, additional details or information, if and when required, at the job site for proper execution of the work.

d. Modifications: Consider and evaluate suggestions or modifications that may be submitted by the Contractor and report them with recommendations to the Architect for final decision.

e. Construction Schedule and Completion: Be alert to the completion, and report same to the Architect. When the construction work has been completed in accordance with the Contract Documents, advise the Architect that the work is ready for general inspection.
and acceptance.

f. Job Conferences: Attend and report to the Architect on all required conferences held at the job site.

g. Observe Tests: See that tests which are required by the Contract Documents are actually conducted; observe, record and report to the Architect all details relative to the test procedures; and advise the architect's office in advance of the schedules of tests.

h. Inspection by Others: If inspectors, representing local, state or federal agencies having jurisdiction over the project, visit the job site, accompany such inspectors during their trips through the project, record the outcome of these inspections, and report same to the Architect's office.

i. Shop Drawings: Do not permit the installation of any materials and equipment for which shop drawings are required unless such drawings have been duly approved and issued by the Architect.

j. Contractor's Requisitions for Payment: Review and make recommendations to the Architect for disposition.

k. List of Items for Correction: After substantial completion, make a list of items for correction before final inspection and check each item as it is corrected.

l. Owner's Occupancy of the Building: If the Owner occupies (to any degree) the building prior to actual completion of the work by the Contractor, be especially alert to possibilities of claims for damage to completed work prior to the acceptance of the building.

m. Owner Existing Operation: In the case of additions to or Demolitions of an existing facility, which must be maintained as an operational unit, be alert to conditions on the job site which may have an effect on the Owner's existing operation.

n. Limitations of Authority: Do not become involved in any of the following areas of responsibility unless specific exceptions are established by written instructions issued by the Architect.

   aa. Do not authorize deviations from the Contract Documents.

   bb. Avoid conducting any test personally.

   cc. Do not enter into the area of responsibility of the Contractor's field superintendent.

   dd. Do not expedite job for Contractor unless so instructed by the Architect.

   ee. Do not advise on or issue directions relative to any aspect of the building technique or sequence unless a specific technique or sequence is called for in the Specifications or by written instructions from the Architect.

   ff. Do not approve shop drawings or samples.

   gg. Do not authorize or advise the Owner to occupy the Project, in whole or in part, prior to the final acceptance of the building.

   hh. Do not issue a Certificate for Payment.

**ARTICLE 3 - OWNER**

3.5 **OWNER'S RIGHT TO DO WORK**

3.5.1 The Owner may exercise his right, which is hereby acknowledged by the Contractor, to let independent of the Contract for the work herein specified, any other work on the premises even if of like character and trades, and the Owner shall not be liable for any damage, loss or expense
incurred by the Contractor through the fault of any other Contractor so employed by the Owner. The Contractor acknowledges the necessity of work by others, to be performed at approximately the same time as the work hereunder, and agrees to perform his work in full cooperation with the work of such other trades and/or Contractors, partially or entirely completed, by such other trades and/or Contractors, or by the Owner, when, in the opinion of the Architect, such access or use is necessary for the performance and completion of any portion or all of the work of others or of any work on the site.

3.6

OWNER'S ACCESS AND PARTIAL OCCUPANCY

3.6.1 The Owner shall have access to the work at all times, and at his election, may from time to time (prior to the stipulated contract completion date) occupy any of the units or parts of the project as the work in connection therewith is complete to such a degree as will, in the opinion of the Owner, permit their temporary or permanent use. The Owner will, prior to any such partial occupancy, give notice to the Contractor thereof and such occupancy shall be upon the following terms:

a. Such occupancy shall not constitute an acceptance of work not performed in accordance with the Contract nor shall such occupancy relieve the Contractor of liability to perform any work by the Contract by not complete at the time of occupancy.

b. Except as otherwise provided by an agreement at the time of such partial occupancy, the Contractor shall be relieved of all maintenance costs on units or parts so occupied.

c. The Contractor shall not be responsible for wear and tear or damage resulting from partial occupancy.

d. The Owner shall assume risk of loss with respect to any unit or part so occupied.

e. The Contractor shall, if required by the Owner, furnish heat, light, water, or other such services to the units or parts occupied and the Owner shall make proper remuneration therefore to the Contractor.

3.6.2 The Contractor agrees that the Owner shall have the right, after seven (7) days' written notice to the Contractor, to place and install as much equipment and machinery during the progress of the work as is possible before the completion of the various parts of the work; and further agrees that such placing and installation of equipment shall not in any way evidence the completion of the work or any portion thereof, nor signify the Owner's acceptance of the work or any portion thereof. Should the Owner place or install such equipment and machinery with his own forces he shall be responsible for any damage to work of the Contractor caused by the Owner's work or workmen. Should the Owner have such placement or installation performed by another Contractor, then the Owner shall require said Contractor to be responsible for all such damage caused by his work, his workers, or his subcontractors.

ARTICLE 4 - CONTRACTOR

4.4 LABOR AND MATERIALS

4.4.3 All materials shall be so delivered, stored and handled to prevent the inclusion of foreign materials and the damage of materials by water or breakage. Packaged materials shall be delivered and stored in original packages until ready for use. Packages or materials showing evidence of water or other damage shall be rejected. All materials shall be of the respective qualities specified herein.

4.4.4 The Contractor shall be responsible for the proper care and protection of all his materials, equipment, etc., delivered at the site. Building materials, equipment, etc., may be stored on the premises subject to the approval of the Architect.

4.4.5 To insure timely availability of critical materials in case of national emergency, the Contractor may order his subcontractors to proceed with fabrication of the same earlier than required by normal sequence of construction. In the event storage facilities are not available on the site or at the source of fabrication, the Owner will endeavor to provide such storage space as may be available to care for same. Where this is necessary, the Contractor shall be paid for all stored material on the Owner's property or on the properties approved by the Owner upon approval of certified
invoices. It shall be the Contractor's obligation to pay for all handling costs and damage to this material. The Contractor shall protect this property against damage.

4.6 TAXES

4.6.1 The Bidder shall include in his proposal and make payment of all Federal, State, County and Municipal taxes including Michigan State Sales and Use Taxes, now in force or which may be enacted during the progress and completion of the work covered.

4.7 PERMITS, FEES AND NOTICES

4.7.3 The Contractor shall pay highway or DPW fees for damages to sidewalks, streets, or other public property or to any public utilities.

4.7.4 Permits and licenses of a temporary nature necessary for the execution of the work shall be secured and paid for by the Contractor.

4.7.5 Except for the General Building Permit (which is not required), the Contractor shall secure and pay for all other required permits, including the following:

<table>
<thead>
<tr>
<th>Service</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>Electrical</td>
<td>State of Michigan</td>
</tr>
<tr>
<td>Plumbing</td>
<td>State of Michigan</td>
</tr>
<tr>
<td>Mechanical</td>
<td>State of Michigan</td>
</tr>
<tr>
<td>Elevator</td>
<td>City of Detroit</td>
</tr>
</tbody>
</table>

4.7.6 The Contractor shall secure certificates of inspection and of occupancy that may be required by authorities having jurisdiction over the work. These certificates shall be delivered to the Architect upon completion of the work.

4.9 SUPERINTENDENT

4.9.2 The Contractor shall give sufficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications, and other instructions, and shall at once report to the Architect any error, inconsistency, or omission which he may discover, but he shall not be held responsible for their existence or discovery.

4.9.3 The Contractor's superintendent shall periodically inspect the entire project to make certain that all of the stipulations of all of the articles of the General Conditions are being observed.

4.12 DRAWINGS AND SPECIFICATIONS AT THE SITE

4.12.1.1 Refer to Paragraph 4.12.1, of A.I.A. General Conditions of the Contract for Construction. Modify the last sentence of this paragraph to read:

"The Drawings, marked to record all changes made during construction, shall be incorporated in the Contractor's 'Informational Package'.”

4.12.2 As a basic and interim step for the fulfillment of the "Informational Package", accurate records of all non-structural underground and concealed work shall be kept, including, but not limited to, all piping, conduit, equipment, and drainage and tunnel work. In addition, such records shall be available for review during various steps of the project.

4.13 SHOP DRAWINGS AND SAMPLES

4.13.9 Immediately before and as a condition of substantial completion, the Contractor shall provide the Owner an "Informational Package" and instructional sessions on the operation, maintenance, and
service of the facility. The "Informational Package" shall include:

1. One (1) set of transparency (sepia) of the approved shop drawings and descriptive material submitted during construction. Any shop documents unobtainable in sepia shall be supplied in three (3) sets.

2. One (1) set of transparency (sepia) of constructional shop drawings with all installation revisions incorporated to reflect the as-built condition. Examples of constructional shop drawings are dimensioned conduit, piping and ductwork layout drawings.

3. Three (3) sets of instructional manuals on the installation, operation, maintenance and service of equipment and systems, including parts lists.

Examples of Specific Information Required:

1. **Electrical**
   a. Conduit layout of light, power, and special systems, indicating dimensionally the locations and size of runs; circuit grouping and conductor size and number in conduit runs.
   b. System description and elementary diagrams, connection and interconnection diagrams, and device internal diagrams.

2. **Mechanical**
   a. Piping and ductwork layout indicating dimensionally the location and size of the runs.
   b. Description and diagrams of control systems.

Following the submittal of the "Informational Package", the Contractor shall schedule and provide, at the Owner's convenience, instructional sessions for Owner's personnel to acquaint them with the operation, maintenance, and service of the system.

3. **Elevators**
   a. Elementary diagrams and description of sequence of operation of the system control components, connection and interconnection diagrams, and device internal diagrams.

**ARTICLE 5 - SUBCONTRACTORS**

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

5.2.3 Delete Article 5.2.3 in its entirety.

5.2.4 Delete Article 5.2.4 in its entirety.

**ARTICLE 7 - MISCELLANEOUS PROVISIONS (Revised 6-13-2011)**

7.5 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

7.5.1 The successful Bidder will be required to furnish a Performance Bond and Labor and Material Payment bond in an amount equal to 100% of the contract award amount, and include such cost in the Proposal, complying with the laws of the State of Michigan. The graduated formula no longer applies.

A. Performance Bond and Labor and Material Payment Bond shall be from a surety company acceptable to the Owner and made payable as follows:
(1) A Labor and Material Payment bond for 100% of the contract award amount to the Board of Governors of Wayne State University, and guaranteeing the payment of all subcontractors and all indebtedness incurred for labor, materials, or any cause whatsoever on account of the Contractor in accordance with the laws of the State of Michigan relating to such bonds.

(2) A Performance bond for 100% of the contract award amount to the Board of Governors of Wayne State University to guarantee and insure the completion of work according to the Contract.

B. The only acceptable Performance Bond shall be the AIA A312 – 2010.

C. The Contractor shall include with his bid evidence of his ability to obtain a Performance Bond in the amount of 100% of the bid amount, and in accordance with the terms and conditions outlined in this section, Such evidence shall be project specific and shall be submitted on a form provided by the Surety or Agent thereof.

7.7 ROYALTIES AND PATENTS

7.7.1 Indemnification and Hold Harmless (Revised 2-2015).

To the fullest extent permitted by law, the Contractor shall hold harmless, defend, and indemnify the Board of Governors of Wayne State University, the University, the Architect and Architect’s Consultants, and officers, employees, representatives and agents of each of them, from and against any and all claims or losses arising out of or alleged to be resulting from, or relating to (1) the failure of the Contractor to perform its obligations under the Contract or the performance of its obligation in a willful or negligent manner; (2) the inaccuracy of any representation or warranty by the Contractor given in accordance with or contained in the Contract Documents; and (3) any claim of damage or loss by any subcontractor, or supplier, or laborer against the University, the Architect or the Architect’s consultants arising out of any alleged act or omission of the Contractor or any other subcontractor, or anyone directly or indirectly employed by the Contractor or any subcontractor.

The Contractor shall also be liable for and hereby agrees to pay, reimburse, fully indemnify and hold the University, the Architect and Architect’s Consultants, harmless from and against all costs and expenses of every nature (including attorney fees and expenses incident thereto) incurred by the University in collecting the amounts due from the Contractor, or otherwise enforcing its rights, under the indemnification described in this Article.

7.9 INTEREST

7.9.1 Delete Article 7.9 in its entirety.

ARTICLE 8 - TIME

8.1 DEFINITIONS

8.1.3 The Date of Substantial Completion of the Work is the Date certified by the Architect when construction of the entire work is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the Work for the use for which it is intended. It is the beginning date for the guarantees on all the Project Work.

8.3.5 LIQUIDATED DAMAGES

It is understood that if said Contract is not completed within the time specified in the Contract plus any extension of time thereto, the Contractor shall pay Liquidated Damages to the Owner as set forth in Article 11 of the Agreement between Contractor and Owner for Construction.

ARTICLE 9 - PAYMENT AND COMPLETION

9.3 PROGRESS PAYMENTS

9.3.1 On or before the 20th day of each month, the Contractor shall submit to the Architect on the
Owner's Standard Form, a written application for payment showing the proportionate value of the work installed to date from which shall be deducted, a reserve of 10% and all previous payments, and the balance of the amount as approved by the Architect shall be due and payable to the Contractor on or about the 15th day of the succeeding month.

9.3.2.2 No payments will be made because of materials or equipment stored off the site, except as provided for in Subparagraph 4.4.5 of the Supplementary General Conditions or other special cases the Owner may approve.

9.6 FAILURE OF PAYMENT

9.6.1 Delete Article 9.6 in its entirety.

ARTICLE 11 - INSURANCE (Revised 2-06-2015)

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.2 The insurance required by Subparagraph 11.1.1 shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations under Paragraph 4.18.

During the life of the Contract, the Contractor shall maintain the following types of insurance:

A. General Requirements

<table>
<thead>
<tr>
<th>Type of Insurance</th>
<th>Minimum Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Commercial General Liability (CGL)</td>
<td>$1,000,000 combined single limit per occurrence</td>
</tr>
<tr>
<td></td>
<td>$2,000,000 aggregate</td>
</tr>
<tr>
<td></td>
<td>Umbrella Liability per occurrence and in the annual aggregate of $5,000,000.</td>
</tr>
<tr>
<td>CGL insurance shall be written on Insurance Services form CG 00 01 (or substitute form providing equivalent coverage) and shall cover liability arising from premises, operation, independent contractors, products-completed operation, and personal injury, contractual liability broad form property damage liability, products and completed operations coverage and X,C,U (explosion, collapse, underground) hazards.</td>
<td></td>
</tr>
<tr>
<td>2. Commercial Automobile Liability (CSL)</td>
<td>$1,000,000 combined single limit</td>
</tr>
<tr>
<td>(including hired and non-owned vehicles)</td>
<td></td>
</tr>
<tr>
<td>3. Workers' Compensation</td>
<td></td>
</tr>
<tr>
<td>(Employers' Liability)</td>
<td>Statutory-Michigan $500,000</td>
</tr>
<tr>
<td>4. Professional Liability insurance</td>
<td>$5,000,000 Professional Liability Amount Per Occurrence and in the Aggregate annually.</td>
</tr>
<tr>
<td>This limit shall be dedicated to the risks of Professional Liability and it shall not be combined with limits of any other coverages such as Environmental/Pollution General Liability, or Umbrella Liability unless otherwise approved by the Owner. Coverage shall be for the benefit of the Contracting or Design-Build entity, its principles, Employees, affiliates, agents, and partners-whether joint or several. It is presumed that this insurance will be Claims Made, and therefore must have a Retro-active date prior to the performance of any work for the Owner, whether or not such work is under contract or purchase order. This insurance will be placed with an insurer licensed to do business in the State of Michigan and rated no less that A X; by AM Best</td>
<td></td>
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</table>
B. Maximum Acceptable Deductibles

<table>
<thead>
<tr>
<th>Type of Insurance</th>
<th>Maximum Deductible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive General Liability</td>
<td>$5,000</td>
</tr>
<tr>
<td>Fire Legal Liability</td>
<td>$5,000</td>
</tr>
<tr>
<td>Comprehensive Automobile Liability</td>
<td>$0</td>
</tr>
<tr>
<td>Workers’ Compensation</td>
<td>$0</td>
</tr>
<tr>
<td>Property - All Risk</td>
<td>$500</td>
</tr>
</tbody>
</table>

11.1.3 The Board of Governors, Wayne State University, shall be named as an additional insured but only with respect to accidents arising out of the performance of said contract. The contractor shall prepare a certificate of insurance which shall name the “Office of Risk Management; 5700 Cass Avenue” as the Wayne State University certificate holder.

11.1.3.1 The Contractor shall either 1) require each of his Subcontractors to procure and to maintain during the life of his subcontract, Subcontractors’ Comprehensive General Liability, Automobile Liability and Property Damage Liability Insurance of the type and in the same amounts as specified in the Subparagraph, or 2) insure the activity of his subcontractors in his own policy.

11.2 OWNER’S LIABILITY INSURANCE

Delete Article 11.2 in its entirety.

11.3 PROPERTY INSURANCE

Delete Article 11.3 in its entirety and replace with the following:

11.3.1 The Contractor shall purchase and maintain property insurance upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, Subcontractors, and sub-subcontractors in the work and shall insure against the perils of Fire, Extended Coverage, Vandalism, and Malicious Mischief.

11.3.2 The Owner and Contractor waive all rights against each other for damages caused by fires or other perils to the extent covered by insurance provided under Subparagraph 11.3.1. The Contractor shall require similar waivers by Subcontractors and sub-subcontractors in accordance with Clause 5.3.1.5.

11.3.3 Insurance must be issued by an insurance company with an “A rating as denoted in the AM Best Key Rating Guide”.

ARTICLE 12 - CHANGES IN THE WORK

12.1 CHANGE ORDERS

12.1.8 Percentage markups in pricing under Subparagraphs 12.1.3.1, 12.1.3.3, and 1.2.4 shall be as limited in the Contract Documents. Unit price of Subparagraph 12.1.3.2 shall represent total unit cost to the Owner and shall include the Contractor's markup for overhead and profit.

ARTICLE 14 - TERMINATION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 If the work is stopped for a period of thirty days under any order of any court or other public authority having jurisdiction, or as a result of any act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the contract or a subcontractor or their agents or employees or other persons performing any of the Work under a contract with the contractor, then the contractor may, upon seven days’ written notice to the Owner and the Architect, terminate the contract and recover from the Owner payment for all Work.
executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment, and machinery, including reasonable profit and damages.

ARTICLE 15 - ADDITIONAL CONDITIONS

15.1 SUBSTITUTION OF MATERIALS AND EQUIPMENT

15.1.1 Whenever a material, article, or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors, which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance, and function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

15.2 NON-DISCRIMINATION PROVISION AND WAGE AND HOUR ACT

15.2.1 During the performance of this contract, the Contractor agrees as follows:

15.2.1.1 The Contractor shall not discriminate against any employee or applicant for employment because of sex, race, creed, color, age, or national origin. The Contractor will take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their sex, race, age, creed, color, or national origin.

15.2.1.2 Such action shall include but not be limited to, the following: employment; upgrading; demotion; or transfer; recruitment or recruitment advertising; layoff or terminations; 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 to be provided setting forth the provisions of this non-discrimination clause.

15.2.1.3 The Contractor will, in all solicitations, or advertisements for employees, placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to sex, race, creed, color, age or national origin.

15.2.1.4 The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or worker's representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of October 27, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

15.2.1.5 The Contractor will comply with all provisions of the Executive Order No. 11246 of October 27, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor or other government agency or authority having jurisdiction.

15.2.1.6 The Contractor will furnish all information and reports required by Executive Order No. 11246 of October 27, 1965, and by the rules, regulations, and orders of the Secretary of Labor or other government agency or authority having jurisdiction, and will permit access to his books, records, and accounts by the administrative agency and the Secretary of Labor for the purposes of investigation to ascertain compliance with such rules, regulations and orders.

15.2.1.7 In the event of the Contractor's noncompliance with the non-discrimination clauses of this contract, or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further University contracts or federally-assisted contracts in accordance with procedure authorized in Executive Order No. 11246 of October 27, 1965, or by rule, regulation, or order of the Secretary of Labor or other government agency or authority having jurisdiction.

15.2.1.8 The Contractor will include in the provisions of Subparagraph 15.2.1.1 through 15.2.1.8 in every subcontract or purchase order unless exempted by rules, regulations or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 204 of Executive Order
No. 11246 of September 14, 1965, so that provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

15.3 COMPLIANCE WITH COPELAND ANTI-KICKBACK ACT AND REGULATIONS

15.3.1 The Contractor shall comply with the Copeland Anti-Kickback Act and Regulations of the Secretary of Labor (29CFR, Part 3) which are herein incorporated by reference.

15.4 PREVAILING WAGES

15.4.1 Contractors and subcontractors shall pay all mechanics and laborers, including apprentices and trainees, no less than the wage and fringe benefit rates prevailing in the locality in which the work is performed. Wage and fringe benefit rates are determined by the Federal Government Department of Labor.

15.4.2 Classifications not provided in the schedule shall be determined prior to the award of the contract and shall be no less than the wage and fringe benefit rates determined by the Federal Department of Labor.

15.4.3 Contractors and subcontractors shall adhere to the ratios of apprentices to journey workers as determined by the Federal Department of Labor.

15.4.4 Contractors and subcontractors shall keep a copy of the prescribed wage and benefit rates posted at the construction site in a conspicuous place.

15.4.5 Contractors and subcontractors shall keep an accurate record of the name, occupation, and the actual benefits paid to each mechanic or laborer for the contract. This record shall be made available for reasonable inspection by the Federal Department of Labor and the Owner.
The Technical Specifications dated **February 24, 2015** and the following List of Drawings represent the scope of work as defined in the Contract Documents from Article 4.

### DRAWINGS

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Title Sheet</td>
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#### Demolition Index

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<td>First Floor Fire Alarm Demolition Plan</td>
<td>February 24, 2015</td>
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<tr>
<td>Second Floor Fire Alarm Demolition Plan</td>
<td>February 24, 2015</td>
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<tr>
<td>Third Floor Fire Alarm Demolition Plan</td>
<td>February 24, 2015</td>
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<tr>
<td>Penthouse Fire Alarm Demolition Plan</td>
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#### Electrical Index

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<td>Lower Level Fire Alarm Plan</td>
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<td>Penthouse Fire Alarm Plan</td>
<td>February 24, 2015</td>
</tr>
</tbody>
</table>
GENERAL REQUIREMENTS

GENERAL

A. CONTRACTOR'S RESPONSIBILITY

It is not the responsibility of the Architect/Engineer or Owner's Representative to notify the Contractor or subcontractors when to commence, to cease, or to resume work; nor in any way to superintend so as to relieve the Contractor of responsibility or of any consequences of neglect or carelessness by him or his subordinates. All material and labor shall be furnished at times best suited for all Contractors and subcontractors concerned, so that the combined work of all shall be properly and fully completed on the date fixed by the Contract.

The Contractor shall be responsible for all items contained in both the specifications and on the drawings for all trades. He shall be responsible for the proper division of labor according to current labor union agreements regardless of the division of responsibility implied in the contract documents.

B. CODES AND STANDARDS

Reference to standard specifications for workmanship, apparatus, equipment and materials shall conform to the requirements of latest specifications of the organization referenced, i.e., American Society for Testing Materials (ASTM), Underwriters Laboratories, Inc. (UL), American National Standards Institute, Inc. (ANSI), and others so listed in the Technical Specifications.

C. PERMITS, FEES AND NOTICES

See Supplementary General Conditions.

D. MEASUREMENTS

Before proceeding with each Work Item, Contractor shall locate, mark and measure any quantity or each item and report quantities to Engineer. If measured quantities exceed Engineer's estimate, Contractor shall obtain written authorization to proceed from Owner before executing Work required for that Work Item.

Measurement of quantities for individual Work Items will be performed by Contractor and reviewed by Engineer. Coordinate measurements with inspection as required in Section "Coordination."

Cost of Work included in Work Item for quantities as indicated in Contract Documents shall be included in Base Bid.

1. Additions to or deductions from lump sum price for quantities of each Work Item added to or deducted from Work respectively shall be at unit prices indicated in Bid Form and shall constitute payment or deductions in full for all material, equipment, labor, supervision and incidentals necessary to complete Work.

E. CONTRACTOR'S MEASUREMENTS

Before ordering material, preparing Shop Drawings, or doing any work, each Contractor shall verify, at the building, all dimensions which may affect his work. He assumes full responsibility for the accuracy of his figures. No allowance for additional compensation will be considered for minor discrepancies between dimensions on the drawings and actual field dimensions.

F. CONTINUITY OF SERVICE (Revised 3-26-2012)

Continuity of all existing services in the building shall be maintained throughout the construction period. Where it is necessary to tie into the existing electrical service, water or waste systems, it shall be done as directed by the Architect/Engineer. This Contract shall also provide temporary lines or bypasses that may be required to maintain continuous service in the building. All utility shutdowns must be approved by the Owners Representative / Project Manager, not less than 7 business days prior to the event, so that proper notification can be posted.
G. SUBMITTALS

All submittals (except Shop Drawings) and samples required by the Specifications shall be submitted in triplicate unless otherwise specified for a particular item under an individual Specification Section.

Each sample shall be clearly identified on a tag attached, showing the name of the Project Consultant, the project number and title, the names of the Contractor, manufacturer (and supplier if same is not the manufacturer), the brand name or number identification, pattern, color, or finish designation and the location in the work.

Each submittal shall be covered by a transmittal letter, properly identified with the project title and number and a brief description of the item being submitted.

Contractor shall be responsible for all costs of packing, shipping and incidental expenses connected with delivery of the samples to the Project Consultant or other designated address.

If the initial sample is not approved, prepare and submit additional sets until approval is obtained.

Materials supplied or installed which do not conform to the appearance, quality, profile, texture or other determinant of the approval samples will be rejected, and shall be replaced with satisfactory materials at the Contractor's expense.

H. GENERAL/STANDARD ELECTRONIC EQUIPMENT AND INFRASTRUCTURE REQUIREMENTS (Revised 11-2008)

1. Compliance with WSU Standards for Communications Infrastructure
   A. All applicable work, products, materials and methods shall comply with the latest version of the “WSU Standards for Communications Infrastructure” except as where noted.
   B. This document is available at the following website/URL: http://networks.wayne.edu/WSU-Communications-Standards.pdf

2. Automation System Program Code
   A. All automation system uncompiled and compiled program codes, source codes, custom modules, graphical user interface screen shots and any other automation system programming data and material (Program Code) shall be provided to the UNIVERSITY in hard copy and on CD Rom in an unencrypted format acceptable to the UNIVERSITY.
   B. Copyright for the Program Code shall be assigned to the UNIVERSITY for purposes of system maintenance.

PROTECTION OF OCCUPANCY (Revised 3-2006)

A. FIRE PRECAUTIONS

Take necessary actions to eliminate possible fire hazards and to prevent damage to construction work, building materials, equipment, temporary field offices, storage sheds, and other property.

During the construction, provide the type and quantity of fire extinguishers and fire hose to meet safety and fire prevention practices by National Fire Protection Association (NFPA) Codes and Standards (available at http://www.nfpa.org/)

In the event that construction includes "hot work", the contractor shall provide the Owner's Representative with a copy of their hot work policy, procedures, or permit program. No hot work activity (temporary maintenance, renovation, or construction by operation of a gas or electrically powered equipment which produces flames, sparks or heat that is sufficient to start a fire or ignite combustible materials) shall be performed until such documents are provided. During such operations, all highly combustible or flammable
materials shall be removed from the immediate working area, and if removal is impossible, same shall be protected with flame retardant shield.

Not more than one-half day's supply of flammable liquids such as gasoline, spray paint and paint solvent shall be brought into the building at any one time. Flammable liquids having a flash point of 100 degrees F. or below which must be brought into the building shall be confined in an Underwriters Laboratories (UL) labeled safety cans. The bulk supply of flammables shall be stored at least 75 feet from the building and other combustible materials. Spigots on drums containing flammable liquids are prohibited on the project site. Drums shall be equipped with approved vented pumps, and be grounded and bonded.

Only a reasonable working supply of combustible building materials shall be located inside the building.

All oil-soaked rags, papers, and other similar combustible materials shall be removed from the building at the close of each day's work, or more often if necessary, and placed in metal containers, with self-closing lids.

Materials and equipment stored in cardboard cartons, wood crates or other combustible containers shall be stored in an orderly manner and accessibly located, fire-fighting equipment of approved types shall be placed in the immediate vicinity of any materials or equipment stored in this type of crate or carton.

No gasoline, benzene, or like flammable materials shall be poured into sewers, manholes, or traps.

All rubbish shall be removed from the site and legally disposed of. Burning of rubbish, waste materials or trash on the site shall not be permitted.

The contractor shall be responsible for the conduct of employees relative to smoking and all smoking shall be in the area designated by the Architect/Engineer.

B. GENERAL SAFETY AND BUILDING PRECAUTIONS

Provide and maintain in good repair barricades, railings, etc., as required by law for the protection of the Public. All exposed material shall be smoothly dressed.

At dangerous points throughout the work environment provide and maintain colored lights or flags in addition to above guardrails.

Isolate Owner's occupied areas from areas where demolition and alteration work will be done, with temporary, dustproof, weatherproof, and fireproof enclosures as conditions may require and as directed by the Architect/Engineer.

Cover and protect furniture, equipment and fixtures to remain from soiling, dust, dirt, or damage when demolition work is performed in rooms or areas from which such items have not been removed.

Protect openings made in the existing roofs, floors, and other construction with weatherproof coverings, barricades, and temporary fire rated partitions to prevent accidents.

Repair any damage done to existing work caused by the construction and removal of temporary partitions, coverings, and barricades.

The Contractor will be held responsible for all breakage or other damage to glass up to the time the work is completed.

Provide protection for existing buildings, interior and exterior, finishes, walls, drives, landscaping, lawns (see below), etc. All damages shall be restored to match existing conditions to the satisfaction of the Architect/Engineer.

The Contractor and Owner will define the anticipated area of lawn damage at the project Pre-Construction Meeting. Whether the lawn is sparse or fully developed, any lawn damaged due to the Contractor's work will be replaced with sod by the University. The University's unit cost of $10.00 per square yard and landscaping at a rate of 1.5 times the cost of the sod repairs, the full cost of which will be assessed against the Contractor. At the completion of the project, a deductive Change Order reflecting this cost will be issued.
The Contractor is to include an allowance in his bid for this corrective work.

C. INTERFERENCE WITH OWNER'S OPERATIONS

The Owner will be utilizing the Building Facilities to carry on his normal business operation during construction. The Contractor shall schedule performance of the work necessary to complete the project in such a way as to interfere as little as possible with the operation during construction. The Contractor shall schedule performance of the work necessary to complete the project in such a way as to interfere as little as possible with the operation of the Owner.

Work which will interfere with the Owner's occupancy, including interruptions to the Owner's mechanical and electrical services, and essentially noisy operations (such as jackhammering) shall be scheduled in advance. The schedule of alterations shall be approved by the Architect/Engineer and the work shall be done in accordance with the approved schedule.

It is understood that the work is to be carried through to completion with the utmost speed consistent with good workmanship and to meet the construction schedule.

The Contractor shall begin work under the Contract without delay upon receipt of the fully-executed contract and shall substantially complete the project ready for unobstructed occupancy and use of the Owner for the purposes intended within the completion time stated in the contract.

The Contractor shall, immediately upon award of contract, schedule his work and expedite deliveries of materials and performance of subcontractors to maintain the necessary pace to meet the construction schedule.

CONTRACTOR'S REPRESENTATION AND COORDINATION

A. FIELD SUPERINTENDENT

Contractor shall assign a full time project manager/superintendent for the duration of the project. This person shall be experienced and qualified in all phases of the work and shall be present at the site during Contractor’s working hours. The project manager shall have Contractor’s full authority to represent Contractor in all routine operations including payment, changes to the work, and scheduling. Contractor shall not re-assign this individual without prior written permission of the Owner.

B. MEETINGS

When directed by the Architect/Engineer, meetings shall be held for the purpose of coordinating and expediting the work. The invited contractors or subcontractors will be required to have qualified representatives at these meetings, empowered to act in their behalf.

C. COORDINATION

The Contractor shall also provide a staff adequate to coordinate and expedite the work properly and shall at all times maintain competent supervision of its own work and that of its subcontractors to insure compliance with contract requirements.

The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the work under the Contractor.

D. CONSTRUCTION SCHEDULE

The Construction Schedule shall be prepared after the award of contract. Soon after, a pre-construction meeting is held with the Owner and the Architect/Engineer to determine the areas to which the Contractor will be allowed access at any one time.

The Contractor is alerted to the fact that areas in which he will be working will be occupied by students and employees of the University as well as the general public. The Contractor's access, to and from the project site, will be confined to limited areas so as not to unduly disrupt the normal activities of the University.

TEMPORARY FACILITIES
A. **GENERAL**

The following temporary facilities descriptions represent standard conditions. Verify accuracy with Architect/Engineer at time of bids.

B. **CONTRACTOR'S OFFICE**

Provide field offices as required. Locate temporary field offices on site where directed by Architect/Engineer. Appearance and location of field offices shall be approved by the Architect/Engineer. Provide for all other administrative facilities and storage off the Owner's property.

C. **STORAGE OF MATERIALS**

All materials shall be stored in areas designated by the Architect/Engineer. All stored materials shall be arranged for the minimum disruption to occupants and to allow full access to and throughout the building. Materials stored outdoors shall be neat and orderly and covered to prevent damage or vandalism.

D. **PARKING**

1. **GENERAL**

   University parking regulations will be strictly enforced.

   Maintain Owner's parking areas free of dirt and debris resulting from operations under the contract.

2. **STANDING AND UNLOADING/LOADING VEHICLES**

   All Contractors are to call Wayne State University Public Safety at 577-2222, and give at least 24 hours advance notice that they have vehicles that must be at the job site.

   Vehicles will be permitted at the project site only as long as the vehicles are needed for loading/unloading, and must be immediately moved upon completion.

   All unauthorized and/or unattended standing vehicles will be subject to ticketing and removal by University Police. Towed vehicles may be reclaimed by calling 577-2222, and paying any assessed charges.

3. **COMPLIMENTARY PARKING**

   There is no complimentary parking for Contractor's employee vehicles.

4. **WAYNE STATE UNIVERSITY PUBLIC/STUDENT PARKING AREAS**

   Public Parking, on a first-come first-served basis is available. Contact the office of the One Card System, at 313.577.9513 for information on availability of parking on a contractual basis.

E. **TOILET FACILITIES**

The Owner's designated existing toilet facilities may be used by workers on the project. Contractor shall maintain such facilities in a neat and sanitary condition.

F. **TELEPHONE USE**

If required, the Contractor shall provide and pay for a temporary telephone within the building for his use and that of his subcontractors.

No use of the Owner's telephone (except pay telephones) will be permitted.
G. ACCESS DEVICES

The Contractor shall furnish and maintain temporary hoists, ladders, railings, scaffolds, runways, and the like as required for safe, normal access to the permanent construction until the permanent facilities are complete. Each trade shall furnish such additional means of access as may be required for the progress and completion of the work. Such temporary access devices shall meet all applicable local, state, and federal codes and regulations.

H. HEAT AND VENTILATION

Provide cold weather protection and temporary heat and ventilation as required during construction to protect the work from freezing and frost damage.

Provide adequate ventilation as required to maintain reasonable interior building air conditions and temperatures, to prevent accumulation of excess moisture, and to remove construction fumes.

Tarpaulins and other materials used for temporary enclosures. Coverings and protection shall be flameproofed.

I. WATER SERVICE

Sources of water are available at the site. The Owner will pay for reasonable amounts of water used for construction purposes.

The Contractor shall provide, at the earliest possible date, temporary connections to the water supply sources and maintain adequate distribution for all construction requirements. The Contractor shall protect sources against damage.

Methods of conveying this water shall be approved by the Architect/Engineer and shall not interfere with the Owner's operations.

J. ELECTRICAL SERVICES

All charges for reasonable amounts of electrical power energy used for temporary lighting and power required for this work will be paid by the Owner.

The Contractor shall provide and maintain any temporary electrical lighting and power required for this work. At the completion of the work, all such temporary electrical facilities shall be removed and disposed of by the Contractor.

Temporary lighting and power shall comply with the regulations and requirements of the National Electrical Code.

INSPECTIONS AND TESTS

The Architect/Engineer shall at all times have access to the work wherever it is in preparation or in progress and the Contractor shall provide proper facilities for such access and for observation.

No failure of the Architect/Engineer, during the progress of the work, to discover or reject materials or work not in accordance with the Contract Specifications and Drawings shall be deemed an acceptance thereof nor a waiver of defects therein. Likewise, no acceptance or waiver shall be inferred or implied due to payments made to contractor or by partial or entire occupancy of the work, or installation of materials that are not strictly in accordance with the Contract Specifications and Drawings.

Where tests are specifically called for in the Specifications, the Owner shall pay all costs of such tests and engineering services unless otherwise stated in the contract.

Where tests are not specifically called for in the Specifications, but are required by the Architect/Engineer or Consultant, the Owner shall pay all costs of such tests and engineering services unless the tests reveal that the workmanship or materials used by the Contractor are not in conformity with the Drawings, Specifications, and/or approved shop drawings. In such event, the Contractor shall pay for the tests, shall remove all work and materials so failing to conform and replace with work and materials that are in full conformity.
CLEAN-UP

The Contractor shall at all times keep the Owner's premises and the adjoining premises, driveways and streets clean of rubbish caused by the Contractor's operations and at the completion of the work shall remove all the rubbish, all of his tools, equipment, temporary work and surplus materials, from and about the premises, and shall leave the work clean and ready for use. If the contractor does not attend to such cleaning immediately upon request, the Architect/Engineer may cause such cleaning to be done by others and charge the cost of same to the Contractor.

The Contractor will be responsible for all damage from fire that originates in, or is propagated by, accumulations of rubbish or debris.

All rubbish and debris shall be disposed of off the Owner's property in an approved sanitary landfill site. No open burning of debris or rubbish will be permitted. Job site shall be left neat and clean at the completion of each day's operation.

PROJECT CLOSE-OUT

A. RECORD DRAWINGS

At beginning of job, provide one copy of Working Drawings, and record changes, between Working Drawings and "As Builts", including changes made by Addenda, Change Orders, Shop Drawings, etc. These shall be kept up to date. Update to indicate make of all mechanical and electrical equipment and fixtures installed. Keep these Record Prints in good condition and available for inspection by the Architect/Engineer.

Upon completion of the job, turn over to the Architect/Engineer Record Prints of Working Drawings showing all job changes.

B. OPERATING AND MAINTENANCE DATA

Prepare and furnish to the Architect/Engineer three (3) bound copies of "Operating and Maintenance Manual" on all equipment installed under this Contract.

Manual shall include copies of all Manufacturers' "Operating and Service Instructions", including Parts List, Control Diagrams, Description of Control Systems, Operating, Electrical Wiring, and any other information needed to understand, operate and maintain the equipment. The names and addresses of all subcontractors shall be included. These instructions shall be custom-prepared for this job -- catalog cuts will not be accepted. Equipment shall be cross-referenced to Section of Specifications and to location shown and scheduled on drawings.


C. FINAL INSPECTION

Secure final inspections from the State of Michigan as soon as the work is completed and immediately submit such Certificates to the Architect/Engineer.

D. GUARANTEES (See Sections 00510 and 01781)

Guarantees on material and labor from the General Contractor and his subcontractors shall be as required in Sections 00510 and 01781.

E. SWORN STATEMENT AND WAIVER OF LIENS (revised 4-11-2012)

Prior to final payment, the General Contractor shall provide a Contractor's Sworn Statement and Full Unconditional Waivers of Liens from all subcontractors for material and labor and from all suppliers who provide materials exceeding $1,000. Sworn Statements and signed waivers from all Subcontractors must accompany Pay Applications or they will be returned for such documentation prior to approval.
ASBESTOS HAZARD

A. The contractor shall not start any work in any area that has not been inspected for asbestos by the Owner's Industrial Hygiene Department, or a qualified representative of the Owner and approval is given for work to be done. If asbestos is found, safety measures as recommended by the Owner's Industrial Hygiene Department, or a qualified representative of the Owner, shall be completed, or approval given for work to be done before work is started. The contractor shall not perform any asbestos removal or containment work under the contract.

KEYS

A. The Owner shall provide the contractor keys on loan to have access to the various spaces in order to complete the contract. Contractor will sign for and be responsible for each key on loan, returnable to Owner upon completion of the contract. In case of any lost keys, the Owner will backcharge the contract $250.00 for each core change. In the event that a Contractor wants access to a secured area, he shall give the Owner a minimum 48-hour notice.
SUMMARY OF WORK

PROJECT: Cohn Building Fire Alarm System Upgrade 2015
WSU PROJECT NO.: 048-251652
PROJECT MANAGER: Thomas J. Edwards

1. EXAMINATION

The Contractor shall visit the site and become familiar with conditions under which he will be working. Also meet with the project manager and review site access, storage areas, etc.

2. Description of Work – Project includes **Installation of a new and complete working Fire Alarm System.** Provide all wiring, equipment, and devices to integrate into the system. Includes all piping, annunciation, alarms, etc. Limited interior architectural work to support new equipment and additional demolition of existing equipment.

3. The building is located at

Wayne State University
Cohn Building
5557 Cass Ave.
Detroit, Michigan 48202
SECTION 00 01 10 – TABLE OF CONTENTS

DIVISION 00  COMPLETED BY OWNER

DIVISION 01  GENERAL REQUIREMENTS
01 10 19  Contract Considerations
01 11 00  Summary of Work
01 22 00  Unit Prices
01 25 13  Product Substitution Procedures
01 31 13  Project Coordination
01 31 19  Project Meetings
01 33 00  Submittal Procedures
01 42 00  References
01 50 00  Temporary Facilities and Controls
01 66 00  Product Storage and Handling Requirements
01 73 29  Cutting and Patching
01 74 00  Cleaning and Waste Management
01 75 00  Starting and Adjusting
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DIVISION 07  THERMAL AND MOISTURE PROTECTION
07 84 13  Penetration Firestopping

DIVISION 26  ELECTRICAL
26 05 00  Common Work Results for Electrical
26 05 20  Conductors and Cables - 600V and Below
26 05 27  Grounding and Bonding
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DIVISION 28  ELECTRONIC SAFETY AND SECURITY
28 31 00  Fire Detection and Alarm

END OF TABLE OF CONTENTS
SECTION 01 10 19 – CONTRACT CONSIDERATIONS

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. Schedule of Values.
   2. Application for Payment.

1.3 SCHEDULE OF VALUES

A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered.

B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds and insurance, breakdown by major category of work, or as directed by Engineer.

D. Revise schedule to list approved Change Orders, with each Application For Payment.

1.4 APPLICATIONS FOR PAYMENT

A. Submit three copies of each application on AIA Form G702 - Application and Certificate for Payment.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Payment Period: Refer to Agreement.

1.5 CHANGE PROCEDURES

A. The Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by AIA A201, 1987 Edition, Article 7.4 by issuing supplemental instructions.

B. The Engineer may issue a Notice of Change, which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications. Contractor will prepare and submit an estimate within 10 days.

C. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 19 10
SECTION 01 11 00 – SUMMARY OF WORK

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 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work covered by the Contract Documents comprises furnishing and installation of a complete addressable fire alarm system located at 5557 Cass Avenue, Detroit, MI for Wayne State University.

B. The Work includes the furnishing and installation of a complete fire alarm system, including all necessary appurtenances.

1.3 TYPE OF CONTRACT

A. Construct the Work of this Contract under a single lump sum Contract, with requested unit prices.

1.4 GENERAL

A. Imperative Language: These Specifications (Divisions 01 through 49) are written in the imperative and abbreviated form. This imperative language of the technical specifications is directed at Contractor unless specifically noted otherwise. Incomplete sentences shall be completed by inserting "shall", "shall be" and similar mandatory phrases by inference in the same manner as they are applied to notes on Drawings. The words "shall", "shall be" and similar mandatory phrases shall be supplied by inference where a colon (:) is used within sentences or phrases. Except as worded to the contrary, fulfill (perform) all indicated requirements whether stated in the imperative or otherwise.

B. Related Sections: Some Sections of these Specifications (Divisions 01 through 49) may include a paragraph titled "Related Sections". This paragraph is an aid to the Project Manual user and is not intended to include all Sections which may be related. It is Contractor's obligation to coordinate all Sections whether indicated under "Related Sections" or not.

C. Reference to the General Conditions: In Divisions 01 through 49, a reference to the General Conditions includes by inference all amendments or supplements in the Supplementary Conditions.

1.5 OWNER FURNISHED MATERIAL

A. Contractor's Responsibilities:
   1. Arrange for and deliver Shop Drawings, and Product data to the Owner and Engineer.
   2. Arrange and pay for Product delivery to Site.
   3. Submit claims for transportation damage.
   4. Arrange for replacement of damaged, defective or missing items.
   5. Arrange for Manufacturer's warranties, inspections and service.
   6. Coordinate delivery schedule of material to site with Owner and Supplier.
   7. Review Shop Drawings, Product data and Samples.
   8. Receive and unload Products at Site; inspect for completeness and damage jointly with Owner.
   9. Handle, store, install and finish Products.
   10. Repair or replace items damaged by the Work of this Contract.

1.6 CONTRACTOR USE OF PREMISES

A. Limit use of premises to allow for work by other contractors.
B. Coordinate use of premises under direction of the Owner.

C. Except in connection with the safety or protection of persons or the Work or property at the Site or adjacent thereto, all Work at the site shall be restricted to the following hours:
   1. Monday Through Friday (Except Legal Holidays): As determined by WSU.
   2. Saturday, Sundays or legal holidays with written approval of the Owner.

1.7 OCCUPANCY REQUIREMENTS

A. Owner Occupancy During Construction:
   1. The Owner will occupy or utilize premises during entire period of construction for conduct of the Owner’s normal operations.
   2. Limit parking for construction vehicles to an area designated by the Owner.

1.8 MILESTONES

A. Not used.

1.9 SALVAGED MATERIALS

A. Ownership:
   1. Owner shall have the option of retaining ownership of any or all existing equipment, materials, and items removed under this Work.
   2. Should Owner decide not to retain ownership of certain items removed under the Work of this Section, those items shall become property of Contractor and shall be promptly removed from the Project Site.

B. Delivery: Deliver items which remain property of Owner to a location, or locations, as selected by the Owner and 2 miles of Site.

PART 2 - PRODUCTS

2.1 OTHER MATERIALS

A. General: All other materials which are not specified herein and are not indicated on the Drawings, but are required for proper and complete performance of the Work.

B. Procedure:
   1. Select new, first quality material.
   2. Obtain Engineer’s review.
   3. Provide and install.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 11 00
SECTION 01 22 00 - UNIT PRICES

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 descriptions of the method of measurement and the basis of payment for Unit Price Work under this Contract.

B. Items included as incidental to Unit Prices for systems and appurtenances. Unless there is a specific pay item identified, the unit price payment shall include, but not be limited to:
   1. Cleanup and surface restoration.
   2. Raceways
   3. Wiring
   4. Voltage drop calculations
   5. Programming
   6. All appurtenances necessary for a complete and functioning system.

C. Provide Unit Prices for the following items:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Duct Mounted Smoke Detector</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>2. Area Smoke Detector</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>3. Wall Mounted Notification Appliance (Strobe)</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>4. Ceiling Mounted Notification Appliance (Strobe)</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>5. Wall Mounted Combination Speaker / Strobe</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>6. Ceiling Mounted Combination Speaker / Strobe</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>7. Addressable interface device</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>8. Furnish and install a new panelboard</td>
<td>$_____________ Each</td>
</tr>
<tr>
<td>9. Ceiling Tile Replacement</td>
<td>$_____________/ Square Foot</td>
</tr>
</tbody>
</table>

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 22 00
SECTION 01 25 13 – PRODUCT SUBSTITUTION PROCEDURES

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 administration of substitutions and Product options.

1.3 SUBMITTALS

A. List of all products proposed for installation:
   1. Submit 5 copies within 30 days after the Effective Date of Agreement unless otherwise indicated elsewhere in the Contract Documents.
   2. Tabulate the list by each Specification Section.

1.4 CONTRACTOR’S OPTIONS

A. Products specified only by reference standards or by description:
   1. Select any Product meeting the standards or description by any Supplier unless otherwise required elsewhere in the Contract Documents.
   2. Submit for Engineer’s review:
      a. Name and address of Supplier.
      b. Trade name.
      c. Model or catalog designation.
      d. Manufacturer’s data including:
         1) Performance and test data
         2) Compliance with reference standards.

B. Products specified by naming one or more suppliers without an "or equal" clause:
   1. Use specified Product of one of the Suppliers named.
   2. No substitutions.

C. Products specified by naming one or more suppliers with an "or equal" clause:
   1. Indicates the option of selecting equivalent Products by stating "or equal" after the specified Suppliers.
   2. Engineer may waive some or all of the requirements specified for substitutions if, at Engineer’s sole discretion, the proposed equivalent Product is considered an "or equal".
   3. If, at Engineer’s sole discretion, the proposed equivalent Product does not qualify as an "or equal", it will be considered as a proposed substitute and a substitution request submittal will be required.

1.5 SUBSTITUTIONS

A. Substitutions after the effective date of agreement:
   1. Within 30 days after the Effective Date of Agreement.
   2. Engineer will consider formal requests for substitution of Products in place of those specified unless otherwise prohibited elsewhere in the Contract Documents.

B. Substitution Request Submittals: Submit 5 copies of the request for substitution including the following:
   1. Complete data substantiating compliance of the proposed substitution with the Contract Documents.
   2. For Products:
      a. Names and addresses of Manufacturer and Supplier.
      b. Product identification.
Product Substitution Procedures

Wayne State University (WSU) Cohn Building Fire Alarm Replacement
WSU #048-251652
FTCH Project Number G140757

c. Manufacturer's literature, including:
   1) Product description.
   2) Performance and test data
   3) Reference standards.

d. Samples.

e. Name and address of similar projects on which the Product was used and date of installation.

3. For Construction Methods:
   a. Detailed description of the proposed method.
   b. Drawings illustrating methods.

4. Itemized comparison of proposed substitution with Product or method specified.

5. Data relating to changes in the construction schedule.

6. Accurate cost data on the substitution and comparison with the Product or method specified.

7. Changes to the Work which would be caused by the substitution.

C. Contractor's Responsibilities: In making a request for a substitution, Contractor represents:
   1. Contractor has personally investigated the proposed Product or method and determined that it is equal or superior in all respects to that which is specified.
   2. Contractor will provide the same guarantee for the substitution as for the Product or method specified.
   3. Contractor will coordinate installation of the accepted substitution into the Work making such changes as may be required for the Work to be completed in all respects.
   4. Contractor waives all claims for additional cost related to the substitution which consequently become apparent.
   5. Cost data is complete and includes all related costs under Contractor's contract, but excludes costs under separate contracts and Engineer's redesign costs.

D. Substitutions Not Considered: Substitutions will not be considered if:
   1. They are indicated or implied on Shop Drawings or Product data submittals without formal request submitted in accordance with this Section.
   2. Acceptance will require substantial revision of the Contract Documents.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 25 13
SECTION 01 31 13 – PROJECT COORDINATION

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 provisions for coordination of the Work.

1.3 GENERAL COORDINATION

A. Coordinate scheduling, submittals and work of the various Sections of the Specifications to:
   1. Ensure efficient and orderly sequence of installation of interdependent construction elements.
   2. Provide for items to be installed later.

B. Interrelated Operating Equipment:
   1. Verify that characteristics of elements are compatible.
   2. Coordinate work of various sections having interdependent responsibilities for:
      a. Installation.
      b. Connection.
      c. Placing in service.

C. In finished areas, except as otherwise indicated:
   1. Conceal pipes, ducts and wiring in the construction.
   2. Coordinate locations of fixtures and outlets with finish elements.

1.4 ACCEPTANCE OF CONDITIONS

A. Inspection:
   1. Prior to performing any work under a section:
      a. Carefully inspect the installed work.
      b. Verify that all such work is complete to the point where the work under that Section may properly commence.
      c. Starting of work indicates acceptance of the condition of components to which the work will be applied.
   2. Verify that all materials, equipment and Products to be installed under a Section may be installed in strict accordance with the original design and reviewed Shop Drawings.

B. Discrepancies:
   1. Resolve all discrepancies and conflicts between the trades.
   2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

1.5 SLEEVES AND INSERTS

A. Function: For pipes, conduits and similar items in forms, walls, partitions and floors.

B. Trades: Furnish required sleeves and inserts.

C. Place sleeve and inserts in ample time so as to not delay work.
D. Except as approved by Engineer, do not place sleeves vertically through:
   1. Beams.
   2. Girders.
   3. Similar construction.

E. Maintain in proper position during subsequent work.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 31 13
SECTION 01 31 19 – PROJECT MEETINGS

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 scheduling and administering of preconstruction and progress meetings.

B. Scheduling and Administration of Meetings:
   1. Responsibility:
      a. Preconstruction Meeting: Owner.
      b. Progress Meetings: Contractor.
   2. Procedures:
      a. Prepare agenda.
      b. Distribute written notice and agendas of meetings 4 days in advance of the meeting date.
      c. Make physical arrangements for the meetings.
      d. Preside at meetings.
      e. Record minutes and include significant proceedings and decisions.
      f. Distribute copies of the minutes within 4 days after meetings to:
         1) Participants.
         2) Others affected by proceedings.

1.3 PRECONSTRUCTION MEETING

A. Schedule: Preconstruction meeting will be scheduled by Owner:
   1. Before starting the Work at the Site.

B. Attendance: Representatives of the following parties are to be in attendance at the meeting:
   1. Owner.
   2. Engineer.
   3. Contractor.
   4. The Fire Department should be invited to send representatives.

1.4 PROGRESS MEETINGS

A. Types of Progress Meetings:
   1. Regular.
   2. Called.

B. Schedule meetings as follows unless otherwise approved by Engineer:
   2. Called: As the progress of the Work dictates.

C. Location: Hold meetings at Site or as indicated in the notice.

D. Attendance: Representatives of the following parties are to be in attendance at the meeting:
   1. Engineer.
   2. Contractor.
   3. Owner's representative as appropriate.
E. Minimum Agenda: The minimum agenda for progress meetings shall consist of the following:
1. Review and approve minutes of previous meetings.
2. Review progress of the Work since the previous meeting.
3. Note field observations, problems and decisions.
4. Identify problems which impede planned progress.
5. Develop corrective measures and procedures to regain plan schedule.
6. Revise construction schedule as indicated.
7. Review submittal schedules; expedite as required to maintain schedule.
8. Maintenance of quality and work standards.
9. Review changes proposed by Owner for their effect on the construction schedule and completion date.
10. Identify all claims and potential claims.
11. Pending changes and substitutions.
12. Complete other current business.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 31 19
SECTION 01 33 00 – SUBMITTAL PROCEDURES

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 procedures for the submittal of Shop Drawings, Product Data, Samples, Operation and Maintenance Manuals, and other information.

B. Related Sections include pertinent Sections of these Specifications for the individual Submittals required.

1.3 DEFINITIONS

A. Submittal: Information sent by Contractor to convey information about systems, equipment, materials, products, and administrative matters for the Work.

B. Resubmittal: Submittal sent for review a second or further time.

C. Product Data: Illustrations, standard schedules, diagrams, performance charts, instructions, brochures, or manufacturer’s literature that describe the physical size, appearance, and other characteristics of materials or equipment for a portion of the Work.

D. Shop Drawings: Drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

E. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

F. Action Submittals: Submittals that require A/E’s response.

G. Informational Submittals: Submittals that do not require A/E’s response.

H. Delegated-Design: In certain individual Specification Sections, design services or certifications by a design professional that are specifically delegated to the Contractor. Performance and design criteria are defined in the individual Specification Sections or on the Drawings. Contractor is solely responsible for design of those items or systems, and achieving specified performance.


1.4 SUBMITTAL PROCEDURES

A. Submittal Schedule:

1. Prepare and submit a Submittal schedule that identifies the following for each Submittal:
   a. Submittal number
   b. Submittal description
   c. Projected date Submittal will be submitted.
Submittal Procedures
Section 01 33 00

Wayne State University (WSU)
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WSU #048-251652
FTCH Project Number G140757

2. An electronic copy (MS Excel file) of a blank Submittal schedule, in the preferred format, will be furnished by Engineer at the preconstruction meeting.

3. Submittal Numbers:
   a. Use the applicable Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.1). Where a Submittal is required via a Drawing (instead of a Specification Section), use the applicable Drawing Number followed by a decimal point and then a sequential number (e.g., M501.1.1).
   b. Resubmittals shall include a letter suffix after another decimal point (e.g., 06 10 00.1.A).
   c. Submittals that are not numbered correctly may be rejected.

B. Delivery Method:
   1. Submittals may be delivered as paper copies or electronic files at Contractor's option.
   2. Advise A/E of delivery method to be used at the preconstruction meeting.
   3. Where Submittals include information that is intended to be printed on sheets larger than 11 inches X 17 inches, or where scale or drawing size are critical for proper review, submit 3 paper copies for review.

4. Paper Copies:
   a. Unless indicated otherwise, submit 3 copies of each Submittal.
   b. One copy of each Action Submittal will be returned to Contractor.
   c. Extra copies submitted by Contractor will be discarded.

5. Electronic Files:
   a. Unless indicated otherwise, submit 1 copy of each Submittal in PDF format.
   b. Scanned Submittals shall be produced in such a way as to not compromise the graphic quality or accuracy of scale, where applicable; and text shall be searchable.
   c. One copy of each Action Submittal will be returned to Contractor.
   d. Submittals may be transmitted via electronic mail (e-mail) or on a CD or DVD. Submittals that are transmitted electronically may be returned electronically at the Engineer’s discretion.

6. Transmit Submittals to party and address identified by Engineer at preconstruction meeting.

C. Coordination and Timing: Coordinate preparation and processing of Submittals with performance of construction activities. Contractor is responsible for cost of delays caused by lack of coordination or tardiness of Submittals. Incomplete Submittals will be rejected.
   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.
      a. Engineer reserves the right to withhold action on a Submittal requiring coordination with other Submittals until related Submittals are received.

D. Processing Time: Allow 15 full working days for Engineer to review each Submittal, including Resubmittals. Time for review shall commence on Engineer’s 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. Engineer will advise Contractor when a Submittal being processed must be delayed for coordination.

E. Identification: Place a permanent label on each Submittal or generate a separate cover sheet.
   1. Indicate name of firm or entity that prepared Submittal.
   2. Provide space to record Contractor’s review and approval markings and action taken by Engineer.
   3. Include the following information:
      a. Project name.
      b. Date.
      c. Name and address of Engineer.
      d. Name and address of Contractor.
      e. Name and address of Subcontractor(s).
      f. Name and address of Supplier(s).
      g. Name of Manufacturer.
      h. Submittal number, including revision identifier.
      i. Drawing number and detail references, as applicable.
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j. Location(s) where product is to be installed, as applicable.

k. Other necessary identification.

F. Deviations: Encircle or otherwise specifically identify deviations from the Contract Documents on Submittals. Submittals that include deviations that are not identified may be rejected. Engineer may or may not consider deviations. Deviations are not substitutions. Refer to Division 01 Section “Product Substitution Procedures” for procedures regarding requests for substitutions.

G. Transmittal: Package each Submittal individually and appropriately for transmittal and handling. Transmit each Submittal using a transmittal form. Engineer will reject Submittal(s) received from sources other than Contractor.

H. Resubmittals: Make Resubmittals in same form and number of copies as initial Submittal.
   1. Note date and content of previous Submittal.
   2. Clearly identify additions and revisions.
   3. Resubmit Submittals until they are marked, “Reviewed, No Exceptions Noted” or “Reviewed With Corrections Noted.”

I. Distribution: Furnish copies of Submittals with mark indicating, “Reviewed, No Exceptions Noted” or “Reviewed With Corrections Noted,” to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.

J. Use for Construction: Unless otherwise indicated by Engineer, use only Submittals with mark indicating, “Reviewed, No Exceptions Noted” or “Reviewed With Corrections Noted.”

1.5 CONTRACTOR’S USE OF ENGINEER’S ELECTRONIC DRAWING FILES

A. At Contractor’s written request, copies of Engineer’s electronic Drawing files may be provided to Contractor for Contractor’s use in connection with Project, including Submittal preparation. Electronic files may be furnished by Engineer for the convenience of the Contractor. Conclusions or information obtained or derived from such electronic files will be at the Contractor’s sole risk. Materials furnished by Engineer that may be relied upon are limited to printed Contract Documents.

B. When Contractor uses Engineer’s electronic Drawing files to facilitate Submittal preparation, prepare Submittals to be project specific. Submittals that are not project specific, including Engineer’s Drawing files submitted on a new title block, will be rejected.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit project specific Action Submittals required by individual Specification Sections. Do not use highlighting that would not be reproducible.

B. Product Data: Collect information into a single Submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for Submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each Submittal to indicate which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's written recommendations.
      b. Manufacturer's product specifications.
      c. Manufacturer's installation instructions.
      d. Color charts as required by individual Specification Sections.
      e. Manufacturer's catalog cuts.
      f. Wiring diagrams showing factory-installed wiring.
      g. Printed performance curves.
      h. Operational range diagrams.
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i. Mill reports.

j. Standard product operation and maintenance manuals.

k. Compliance with specified referenced standards.

l. Testing by recognized testing agency.

m. Application of testing agency labels and seals.

n. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.

5. Maintain copy of returned Submittal for Project records.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale where appropriate. Scale shall be sufficiently large to indicate pertinent features of the item and its method of connection to the Work.

1. Preparation: Fully illustrate requirements of the Contract Documents. Include the following information, as applicable:

   a. Dimensions.

   b. Identification of products.

   c. Fabrication and installation drawings.

   d. Colors and materials as applicable.

   e. Roughing-in and setting diagrams.

   f. Wiring diagrams showing field-installed wiring, including power, signal, control, and communication wiring. Differentiate between Manufacturer-installed and field-installed wiring.

   g. Manufacturing instructions.

   h. Templates and patterns.

   i. Schedules.

   j. Calculations.

   k. Compliance with specified standards.

   l. Notation of coordination requirements.

   m. Notation of dimensions established by field measurement.

   n. Relationship to adjoining construction clearly indicated.

2. Sheet Size: Submit Shop Drawings on sheets at least 8-1/2 inches X 11 inches but no larger than 36 inches X 48 inches.

3. Maintain copy of returned Shop Drawings for Project records.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements, and for a comparison of these characteristics between Submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components, such as accessories, together in one Submittal package.

2. Identification: On unexposed side of Samples, attach label that includes the following:

   a. Generic description of Sample.

   b. Product name and name of Manufacturer.

   c. Sample source.

   d. Number and title of appropriate Specification Section.

3. Samples for Initial Selection: Submit Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available. Where Contract Documents indicate custom color or material, coordinate production of custom Samples with the Engineer and Manufacturer prior to submittal.

   a. Number of Samples: Unless indicated otherwise, submit 3 full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from Manufacturer's product line. A/E will return 1 Sample with options selected.

4. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, physically identical with material or product proposed for use, and that show full range of color and texture variations expected.

5. Samples include, but are not limited to, the following: Partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

6. Number of Samples: Unless indicated otherwise, submit 3 sets of Samples. A/E will retain 1 Sample set; remainder will be returned.

   a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
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b. If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

7. Disposition: Maintain sets of approved Samples at Site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used by A/E to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples shall be in an undamaged condition at time of Substantial Completion.
   b. Samples not incorporated into the Work, or otherwise designated to become Owner's property, are the property of Contractor.

E. Operation and Maintenance Manuals:
   1. General:
      a. Where manuals are required to be submitted covering items included in the Work, prepare such manuals in durable plastic binders approximately 8-1/2 inches X 11 inches in size and with at least the following:
         1) Identification on, or readable through, the front cover stating general nature of the manual.
         2) Neatly typewritten index near the front of the manual.
         3) Complete instructions regarding operation and maintenance of equipment involved, including:
            a) Equipment function, normal operating characteristics, and limiting conditions.
            b) Assembly, installation, alignment, adjustment, and checking instructions.
            c) Operating instructions for start-up, routine and normal operating, regulation and control, shutdown, and emergency conditions.
            d) Maintenance instructions, including lubrication requirements where applicable.
            e) Guide to "troubleshooting".
            f) Parts lists and predicted life of parts subject to wear.
            g) Project specific outline and cross sections, assembly drawings, engineering data, and wiring diagrams. Wiring diagrams shall reflect final, as-installed conditions and include wire numbers.
            h) Test data and performance curves.
         4) Complete nomenclature of all replaceable parts, their part numbers, current costs, and name and address of nearest vendor of parts.
         5) Copies of guarantees and warranties issued.
         6) Copies of the reviewed Submittals.
         7) Copies of data concerning changes made during construction.
   2. Extraneous Data: Where contents of the manuals include Manufacturer's catalog pages, clearly indicate the precise items included in this installation and delete all Manufacturers' data with which this installation is not concerned. Do not use highlighting that would not be reproducible.
   3. Number of Copies Required: Unless otherwise specifically directed by A/E, or stipulated in the pertinent Section of these Specifications:
      a. For review, submit 1 paper and 1 electronic copy.
      b. For record, deliver 4 paper and 1 electronic copies to A/E and Owner.
   4. Schedule delivery of record copies of operation and maintenance manuals at least 60 days prior to startup of respective equipment, unless otherwise specified.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by individual Specification Sections. Do not use highlighting that would not be reproducible.

B. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects/engineers and owners, and other information specified.
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D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on Manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by Manufacturer for this Project.

F. Manufacturer Certificates: Prepare written statements on Manufacturer's letterhead certifying that Manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Prepare written statements on Manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on Manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by Manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by Manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
   1. Name of evaluation organization.
   2. Date of evaluation.
   3. Time period when report is in effect.
   4. Product and manufacturers’ names.
   5. Description of product.
   6. Test procedures and results.
   7. Limitations of use.

L. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

M. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

N. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

O. Manufacturer's Instructions: Prepare written or published information that documents Manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of Manufacturer. Include the following, as applicable:
   1. Preparation of substrates.
   2. Required substrate tolerances.
   3. Sequence of installation or erection.
   4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

P. Manufacturer’s Field Reports: Prepare written information documenting tests and inspections of factory-authorized service representative. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement of substrate condition and acceptability of substrate for installation or application of product.
3. Statement that products at Site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
8. Other required items indicated in individual Specification Sections.

Q. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to A/E.
1. A/E will not review Submittals that include MSDSs and will return the entire Submittal for Resubmittal.

2.3 DELEGATED-DESIGN SUBMITTALS

A. Where design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

B. Performance type design documents and calculations shall be prepared by a design professional as required by the individual Specification Section, licensed in the State where the Project is being constructed. Design documents shall be signed and sealed by the responsible design professional. Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Identify name and version of software, if any, used for calculations.

C. In addition to Shop Drawings, Product Data, and other required Submittals, submit two copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR’S REVIEW

A. Review each Submittal and check for coordination with other work of the Contract and for compliance with the Contract Documents. Verify field dimensions and conditions; note corrections as necessary. Mark with approval stamp before submitting to A/E.
1. Approval Stamp: Stamp each Submittal with an approval stamp. Use the same stamp format for each Submittal. Include Project name and location, Submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that Submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

B. Submittals that are not approved and stamped by Contractor will be rejected.
3.2  A/E’S REVIEW

A. Action Submittals:  A/E will review Action Submittals, make marks to indicate corrections or modifications required, and return Submittal.  A/E will stamp each Submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Reviewed, No Exceptions Noted:  Submittal appears to conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Reviewed With Corrections Noted:  Upon incorporation of review comments, it appears that Submittal will conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

3. Revise and Resubmit:  Submittal has one or more specific segments that are incomplete, do not appear to conform to the information given in the Contract Documents, or are incompatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.  Contractor shall resubmit information for review to demonstrate understanding of comments and portions of Work to be provided.  Except as noted, Contractor shall not proceed with work related to Submittal.

4. Rejected, Resubmit:  Submittal as a whole is incomplete, does not appear to conform to the information given in the Contract Documents, or is incompatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.  Contractor shall resubmit information for review to demonstrate understanding of comments and portions of Work to be provided.  Contractor shall not proceed with work related to Submittal.

B. Informational Submittals:  Other Submittals required by the Contract Documents are for information only.  A/E will acknowledge receipt of Informational Submittals. Such Submittals include, but are not limited to:

1. Qualifications Data.
2. Certificates.
3. Test Reports.
4. Manufacturer’s Instructions.
5. Maintenance Data.
6. Field Reports.


D. Submittals not required by the Contract Documents will be returned without being reviewed.

E. Partial Submittals are not acceptable, will be considered non-responsive, and will be rejected.

3.3  RE-REVIEW COSTS

A. Compensation:

1. Should A/E be required to review a Submittal more than twice because of failure of the Submittal to meet the requirements of the Contract Documents, A/E will record A/E’s expenses for performing additional reviews.

2. Owner will compensate A/E for these additional services and deduct the amount paid from payments to Contractor.

END OF SECTION 01 33 00
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 provisions for references throughout the Contract Documents.

1.3 DEFINITIONS

A. Abbreviations:

1. AASHTO - American Association of State Highway and Transportation Officials, 444 North Capitol Street, N.W., Suite 249, Washington, DC 20001.
2. ACI - American Concrete Institute, 38800 Country Club Dr., Farmington Hills, MI 48331.
3. AISC - American Institute of Steel Construction, Inc., One East Wacker Dr., Suite 700, Chicago, IL 60601-1802.
5. ANSI - American National Standards Institute, 25 West 43rd St., 4th Floor, New York, NY 10036.
7. ASTM - American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.
8. AWS - American Welding Society, Inc., 550 N.W. LeJeune Road, Miami, FL 33126.
9. AWWA - American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.
10. CRSI - Concrete Reinforcing Steel Institute, 933 Plum Grove Road, Schaumburg, IL 60173-4758.
11. MDEQ – Michigan Department of Environmental Quality, 525 West Allegan Street, P.O. Box 30473, Lansing, MI 48909-7973.
12. MDNR - Michigan Department of Natural Resources, 530 West Allegan Street, P.O. Box 30028, Lansing, MI 48909.
13. MDOT - Michigan Department of Transportation, 425 West Ottawa Street, P.O. Box 30050, Lansing, MI 48909.
14. MDCH - Michigan Department of Community Health, 201 Townsend Street, Lansing, MI 48913.
15. MIOSHA - Michigan Department of Licensing and Regulatory Affairs, Michigan Occupational and Health Administration, State Secondary Complex, 7150 Harris Drive, P.O. Box 30643, Lansing, MI 48909-8143.
16. NCMA - National Concrete Masonry Association, 13750 Sunrise Valley Drive, Herndon, VA 20171-4662.
17. NEC - National Electrical Code (see NFPA 70).
18. NEMA - National Electrical Manufacturers' Association, 1300 N. 17th Street N.W., Suite 1752, Rosslyn, VA 22209.
20. PCI - Precast Concrete Institute, 200 West Adams, Suite 2100, Chicago, IL 60606.
21. SDI - Steel Deck Institute, P.O. Box 25, Fox River Grove, IL 60021.
22. SJI - Steel Joist Institute, 234 West Cheves Street, Florence, SC 29501.
23. UL - Underwriters’ Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

1.4 REFERENCES

A. The provisions of the Contract Documents shall govern over any conflicting provisions of the referenced documents.
B. The provisions of laws and regulations shall govern over any conflicting provisions of the referenced documents.

C. Comply with the referenced document that is in effect as of the Bid date, except when a specific date is specified.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 42 00
SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

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 furnishing and installation of construction facilities as follows:
2. Contractor’s field offices.
4. Temporary heat.
5. Project signs.
6. Enclosures such as tarpaulins, barricades and canopies.
7. Storage areas.

1.3 SUBMITTALS

A. Samples: For construction project identification sign.
1. Required Sample:
   a. 11 x 17 color proofs of sign representing actual appearance of sign producer's final product.
   b. Created by sign producer.
2. Submit and obtain review by Engineer prior to printing final version of vinyl.

1.4 QUALITY ASSURANCE

A. Construction Project Identification Sign Producer Qualifications:
1. Having a minimum of 3 years experience in production of signs of specified type.

1.5 STORAGE AREAS

A. Locations:
1. Specific storage locations within the general areas:
   a. Carefully coordinate with Owner.
   b. Subject to approval of Owner.

B. Protection and Restoration:
1. Protect trees and shrubs in the staging areas.
2. Replace grass and other vegetation disturbed or damaged in the process of the work.
3. Take reasonable means to prevent spillage of fuel, oil, chemicals and similar materials.
4. Clean up spills and, if necessary, remove soil and replace with uncontaminated soil so as to allow vegetation to be quickly reestablished.
5. Provide secondary containment for storage of hazardous materials, as required by Owner, governing authorities and agencies.

C. Cleaning: Keep storage areas clean in accordance with Division 01 Section “Cleaning and Waste Management.”

D. Storage: Maintain in accordance with Division 01 Section “Product Storage and Handling Requirements.”
PART 2 - PRODUCTS

2.1 MATERIALS

A. General:
1. New or used.
2. Adequate in capacity for the required usage.
3. Provide safe conditions.
4. Comply with requirements of applicable codes and standards.

2.2 UTILITIES

A. Temporary Utilities:
1. Coordinate with Owner - utility charges for all power, water and other utilities.
   a. After completion of the Work, remove temporary items.

2.3 FIELD OFFICES

A. Contractor's Field Office: Coordinate location with Owner.

2.4 SANITARY FACILITIES

A. Coordinate use of toilets with Owner; maintain in a sanitary condition at all times.

2.5 OTHER TEMPORARY CONSTRUCTION FACILITIES

A. Furnish, install and maintain all other temporary construction facilities necessary for proper completion of the Work.

PART 3 - EXECUTION

3.1 GENERAL

A. Comply with applicable requirements specified in:
   1. Division 26 - Electrical.
   2. Division 28 – Fire Detection and Alarm
   3. Local Building Code.

B. Maintain and operate systems to ensure continuous service.

C. Modify and extend systems as Work progress requires.

3.2 TEMPORARY CONTROLS

A. Access Points:
   1. Provide adequate warning signs, barricades; take all necessary precautions for the protection of the Work, and the safety of the general public.

3.3 REMOVAL

A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work. Remove all such temporary facilities and controls as rapidly as progress of the Work will permit.

END OF SECTION 01 50 00
SECTION 01 66 00 – PRODUCT STORAGE AND HANDLING REQUIREMENTS

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 provisions for the storage and protection of Products.

1.3 STORAGE AND PROTECTION

A. Storage:
   1. Maintain ample way for foot traffic at all times, except as otherwise approved by A/E.
   2. Repair or replace property damaged by reason of storing of material at no additional cost to Owner.
   3. Packaged Materials:
      a. Delivered in original, unopened containers.
      b. Stored until ready for use.
   4. Materials shall meet the requirements of these Specifications at the time that they are used in the Work.
   5. Store Products in accordance with Manufacturer’s instructions.

B. Protection:
   1. Use all means necessary to protect the:
      a. Products of every Section before, during and after installation.
      b. Installed work and materials of all trades.
   2. All materials shall be delivered, stored and handled to prevent:
      a. The inclusion of foreign materials.
      b. Damage by water, breakage or other causes.
   3. Provide weathertight storage sheds with raised floors as may be required to adequately protect those materials and Products stored on the Site which may require protection from damage by the elements.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of A/E and at no additional cost to Owner.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 66 00
SECTION 01 73 29 – CUTTING AND PATCHING

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 provisions for cutting and patching work.

B. Requirements:
   1. Cutting and patching may be described in various Sections of these Specifications
   2. Execute cutting, including excavating and filling, or patching of work required to:
      a. Make several parts fit properly.
      b. Uncover work to provide for installation of ill-timed work.
      c. Remove and replace defective work.
      d. Remove and replace work not conforming to the requirements of the Contract Documents.
      e. Remove Samples of the installed work as specified for testing.
      f. Install specified work in existing construction.

C. Requirements Upon A/E's Instructions:
   1. In addition to Contract requirements, upon written instruction of A/E:
      a. Uncover work to provide for A/E's observation of covered work.
      b. Remove Samples of installed materials for testing.
      c. Remove work to provide for alteration of existing work.

D. Protection of Work:
   1. Do not endanger any work by cutting or altering the work or any part of it.
   2. Do not cut or alter the work of another trade without written consent of A/E.

1.3 SUBMITTALS

A. Written Notice:
   1. Prior to cutting which may affect the structural integrity of the Project or the work of another trade, submit written notice to A/E and Owner requesting consent to proceed with cutting.
   2. Required Information:
      a. Identification of Project.
      b. Description of all related defective work.
      c. Necessity for cutting.
      d. Affect on other work or on the structural integrity of the Project.
      e. Description of the proposed work including:
         1) Scope of cutting and patching.
         2) Subcontractor and trades to execute work.
         3) Products proposed to be used.
         4) Extent of refinishing.
      f. Alternatives to cutting and patching.
      g. Designation of party responsible for the cost of cutting and patching.
B. Changes of Materials or Methods:
   1. Should conditions of the Work, or the schedule, indicate change of materials or methods, submit a
      written recommendation to A/E including:
      a. Conditions indicating the change.
      b. Recommendations for alternative materials or methods.
      c. Submittals as required for substitutions.

C. Uncovered Work: Submit written notice to A/E designating the time work will be uncovered to provide for
   observation.

1.4 DIVISION OF WORK

A. Work:
   1. In accordance with the General Conditions, Contractor is responsible for dividing the Work among the
      Subcontractors and Suppliers and for delineating the work to be performed by specific trades.
   2. The following are suggestions as to how the Work may be divided. This is not a complete list of all the
      Work:
      a. Each trade shall be financially responsible for all cutting and patching for sleeves, penetrations
         and installation of isolated components as necessary for its work unless herein specifically
         stated to the contrary.
      b. On renovation projects, Contractor shall cut and patch walls, floors, ceilings to allow for
         continuous runs of recessed utilities and ductwork.
      c. All patching shall be done by the trade whose work is damaged.
      d. Any cost caused by defective or ill-timed work shall be borne by the party responsible.
      e. Each trade shall do all fitting of its own work as required to make its several components fit
         together or to receive the work of other contractors.
      f. Holes cut in exterior walls or roofs for installation of mechanical or electrical equipment shall be
         waterproofed. If existing roofing is to remain, obtain and submit to Owner original roofing
         manufacturer's approval and warranty on new roof penetrations and where removing existing
         roof penetrations and curbs.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials and workmanship shall conform to the requirements of other Sections of the Specifications.
   Where no materials are specified in these specifications, use materials of an equivalent type, quality, and
   size to match those existing in other areas of the facility. If none exist, use materials and workmanship
   recognized as of the highest quality in the industry. Obtain A/E's review of all such material and
   workmanship.

PART 3 - EXECUTION

3.1 INSPECTION

A. Existing Conditions: Inspect existing conditions of the Work, including elements subject to movement or
   damage during cutting and patching or excavating and backfilling.

B. Uncovered Work: After uncovering work, inspect conditions affecting the installation of new Products.

3.2 PREPARATION

A. Shoring and Bracing: Provide shoring, bracing and support as required to maintain structural integrity of the
   Project.

B. Protection: Provide protection for other portions of the Project and provide protection from the elements.
3.3 PERFORMANCE

A. Adjustments to Products: Execute fitting and adjustments of Products to provide finished installation.

B. Refinishing:
   1. Prepare existing surfaces for finishes by scraping, sanding, filling, acid etching, and sand blasting to ensure bonding and a smooth finish.
   2. Refinish entire surfaces as necessary to provide an even finish.
   3. Refinish continuous surfaces to the nearest intersection.
   4. Refinish entire assemblies.

3.4 CLEANING

A. Clean materials installed under this Section in accordance with Division 01 Section “Cleaning and Waste Management.”

END OF SECTION 01 73 29
SECTION 01 74 00 – CLEANING AND WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes provisions for maintaining structures and the Site in a standard of cleanliness.

B. Related Sections: In addition to standards described in this Section, comply with requirements for cleaning as described in various other Sections of these Specifications.

1.3 QUALITY ASSURANCE

A. Inspection:
   1. Daily and more often if necessary.
   2. Conduct inspections to verify that requirements of cleanliness are being met.

1.4 DELIVERY, STORAGE AND HANDLING

A. Hazards Control:
   1. Volatile Wastes:
      a. Store in covered metal containers.
      b. Remove from premises daily.
      c. Provide secondary containment for storage of hazardous materials, as required by Owner, governing authorities and agencies.
   2. Prevent accumulation of wastes which create hazardous conditions.
   3. Provide adequate ventilation during use of volatile or noxious substances.

1.5 PROJECT CONDITIONS

A. Cleaning and Disposal:
   1. Conduct operations to comply with local ordinances and anti-pollution laws.
   2. Not Allowed:
      a. Burning or burying of rubbish or waste materials on Site.
      b. Disposal of volatile wastes in storm or sanitary sewers: Volatile wastes include, but are not limited to, mineral spirits, oil or paint thinner.
      c. Disposal of wastes into streams or waterways.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Compatibility:
   1. Compatible with the surface being cleaned.
   2. Recommended by the Manufacturer of the material being cleaned.
   3. As reviewed by A/E.
PART 3 - EXECUTION

3.1 PROGRESS CLEANING

A. General:
1. Store Materials:
   a. In an orderly arrangement allowing maximum access.
   b. To allow unimpeded drainage and traffic.
   c. Provide for the required protection of materials.
2. Do not allow accumulation of scrap, debris, waste material and other items not required for construction of the Work.
   a. Remove from Site at least each week and more often if necessary.
   b. Provide adequate storage for materials awaiting removal.
3. Observe requirements for fire protection and protection of the environment.

B. Site:
1. Daily, and more often if necessary:
   a. Inspect the Site.
   b. Pick up scrap, debris and waste material; remove such items to the place designated for their storage.
2. Weekly, and more often if necessary:
   a. Inspect arrangements of materials stored on Site.
   b. Restack or otherwise service arrangements to meet the requirements of paragraph 3.1.A.1 above.
3. At all times maintain the Site in a neat and orderly condition which meets the approval of Engineer.
5. Dust Control:
   a. Control dust on or near the Work by approved means.
   b. If Contractor fails to correct unsatisfactory conditions with 24 hours after due notification:
      1) Owner may arrange for such work to be performed by other means.
      2) Pay costs.

C. Buildings and Other Structures:
1. Weekly, and more often if necessary:
   a. Inspect.
   b. Pick up scrap, debris and waste material; remove such items to the place designated for their storage.
   c. Sweep interior spaces clean. Clean shall be defined to be free from dust and other material capable of being removed by reasonable diligence using a hand-held broom.
2. Preparation for installation of succeeding material:
   a. Clean the building or other structure or pertinent portion thereof:
      1) To the degree of cleanliness recommended by the Manufacturer of the succeeding material.
      2) Using equipment and materials required to achieve the required cleanliness.
3. After installation of finish floor material:
   a. Clean the finish floor daily at all times while work is being performed in the space in which finish materials have been installed.
      1) Clean as used above shall be defined to be free from all foreign material which, in the opinion of A/E, may be injurious to the finish floor material.
4. Schedule cleaning operations so that dust and other contaminants resulting from cleaning operations will not fall on wet, recently painted surfaces.

3.2 FINAL CLEANING

A. Definitions for Clean: The level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
B. Prior to Completion of the Work:
   1. Remove from the Site all tools, surplus materials, equipment, scrap, debris and waste.
   2. Conduct final progress cleaning as described in Article 3.1 above.

C. Site:
   1. Unless otherwise specifically directed by A/E:
      a. Hose down paved areas on Site and public sidewalks directly adjacent to the Site.
      b. Rake clean other surfaces of the grounds.
   2. Remove resultant debris.

D. Buildings, Tanks and Other Structures:
   1. Interior:
      a. Visually inspect interior surfaces.
      b. Remove traces of soil, waste material, smudges and other foreign matter.
      c. Remove traces of splashed materials from adjacent surfaces.
      d. Remove paint droppings, spots, stains and dirt from finished surfaces using only the specified cleaning materials and equipment.
   2. Glass: Clean glass inside and outside.
   3. Polished Surfaces: To surfaces requiring the routine application of buffed polish, apply the specified polish as recommended by the Manufacturer of the material being polished.

E. Timing: Schedule final cleaning as approved by Owner to enable Owner to accept a completely clean Project.

3.3 OWNER OCCUPANCY PRIOR TO SUBSTANTIAL COMPLETION AND ACCEPTANCE

A. If Owner occupies the Work, or a portion of the Work, prior to Substantial Completion and acceptance, then the responsibilities for interim and final cleaning shall be determined by Engineer in accordance with the Contract Documents.
SECTION 01 75 00 – STARTING AND ADJUSTING

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 provisions for facility startup and demonstration of the Fire Alarm System.

1.3 SUBMITTALS

A. Preliminary Schedules:
   1. Submit 2 weeks prior to earliest proposed date.
   2. List time and date for the following for each system:
      a. Start-up.
      b. Demonstration.

B. Completion Reports:
   1. Submit within 1 week after each system demonstration.
   2. List time, date and persons present for the following for each system:
      a. Start-up.
      b. Demonstration.
   3. Include Manufacturer's representative's report indicating:
      a. Approval of installation.
      b. Satisfactory start-up.
      c. Functioning correctly.
   4. Indicate that demonstration and instructions were satisfactorily completed.

1.4 QUALITY CONTROL

A. Manufacturer's Field Services:
   1. Provide the following services except where indicated otherwise in individual Sections.
      a. Inspect, check and approve system installation.
      b. Supervise system start-up.
      c. Provide written report indicating that the system has been properly installed in accordance with the code, Drawings and specifications.
      d. Demonstrate operation of system to Owner's personnel.
      e. Instruct Owner's personnel on operation and maintenance of system.

1.5 PROJECT CONDITIONS

A. Verify that Interdependent systems have been checked and are operational.

1.6 CORRECTION PERIOD

A. Provide periodic continuing warranty services as necessary to ensure proper functioning of systems after occupancy of the Project, and for a period of 1 year after date of Substantial Completion.
PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING OF SYSTEMS

A. Inspection:
1. Verify that Project conditions comply with requirements.
2. Verify that status of Work meets requirements for starting of systems.

B. Preparation:
1. Coordinate sequence for start-up of system.
2. Notify Engineer 7 days prior to start-up of system.
3. Have at hand during entire start-up process:
   b. Shop Drawings.
   c. Product data.
   d. Operation and maintenance data.
4. Verify that the system has been checked for control sequence.
5. Verify control systems are fully operational in automatic mode.

C. Start-up:
1. Execute start-up under supervision of responsible persons in accordance with Manufacturer's instructions.
2. Place equipment in operation in proper sequence.

3.2 SYSTEMS DEMONSTRATION

A. Preparation:
1. Verify that system:
   a. Has been inspected and put in service.
   b. Is fully operational.
2. Operation and Maintenance Manuals:
   a. Completed.
   b. Sufficient copies available for use in demonstrations and instructions.

B. Demonstrations and Instructions:
1. Demonstration of and instruction on operation and maintenance of system to Owner's personnel.
2. Instruction:
   a. Operation and maintenance manual as basis.
   b. Review contents of manual in detail.
   c. Explain all aspects of operation and maintenance.
3. Demonstrate:
   a. Start-up.
   b. Communication with the Central Station.
   c. Annunciation at the Control Panel.
   d. Operation.
   e. Control.
   f. Adjustment.
   g. Troubleshooting.
   h. Servicing.
   i. Maintenance.
3.3 PERFORMANCE TEST

A. Performance Test:
1. Test the entire Work, including all of its individual systems for 2 weeks before final payment will be made.
2. Make final tests in the presence of Owner and Engineer.
3. If any part of the Work or equipment does not meet Specifications:
   a. Correct the situation.
   b. Obtain approval of Engineer before final payment is made.
4. Provide the personnel and bear all costs for correcting all malfunctions.
5. Owner will provide operating personnel and utilities.

END OF SECTION 01 75 00
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 instructions for and the responsibilities of each party in contract closeout.

B. Related Section includes Certificate of Substantial Completion.

1.3 SUBSTANTIAL COMPLETION

A. Contractor: When Contractor considers that the Work or any portion of the Work is ready for its intended use, Contractor shall submit:
   1. Written certification to A/E and Owner that the Work, or designated portion of the Work, is substantially complete.
   2. A list of major items to be completed or corrected.
   3. Request that A/E issue a certificate of Substantial Completion.

B. A/E's Inspection: A/E will make an inspection:
   1. Within 10 days after receipt of certification.
   2. Together with Owner and Contractor.

C. A/E's Determination of Substantial Completion:
   1. Should A/E consider the Work or designated portion of the Work substantially complete, the following steps shall be taken:
      a. Contractor shall prepare and submit to A/E, a list of items to be completed or corrected as determined by the inspection.
      b. A/E will prepare and deliver to Owner:
         1) A tentative certificate of Substantial Completion.
         2) A tentative list of items to be completed or corrected before final payment.
      c. Owner shall have 7 days after receipt of the tentative certificate during which to make written objection to A/E as to any provisions of the certificate or attached list.
      d. A/E will, within 14 days after delivery of tentative certificate to Owner, decide:
         1) Not Substantially Complete: A/E will issue written notice to Contractor stating reasons.
         2) Substantially Complete: A/E will issue definitive certificate of Substantial Completion and a revised list of items to be corrected or completed.
   2. Should A/E consider that the Work or designated portion of the Work is not substantially complete, the following steps shall be taken:
      a. A/E shall notify Contractor in writing stating A/E's reasons.
      b. Contractor shall complete the Work and send a second written notice to A/E certifying that the Project, or designated portion of the Project, is substantially complete.
      c. A/E and Owner will reinspect the Work.

D. Division of Responsibilities:
   1. A/E:
      a. At the time of delivery of tentative certificate of Substantial Completion.
      b. Deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment with respect to:
         1) Security.
         2) Operation.
3) Safety.
4) Protection of the Work.
5) Maintenance.
6) Heat.
7) Utilities.
8) Insurance.
9) Warranties.

2. A/E's written recommendation on division of responsibilities shall be binding on Owner and Contractor until final payment unless Owner and Contractor agree otherwise in writing and so notify Engineer prior to Engineer's issuance of a definitive certificate of Substantial Completion.

1.4 FINAL INSPECTION

A. Contractor Certification: Prior to final inspection, Contractor shall submit written certification that:
   1. The Contract Documents have been reviewed.
   2. The Project has been inspected in compliance with the Contract Documents.
   3. Work has been completed in accordance with the Contract Documents.
   4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
   5. The Project is complete and ready for final inspection.

B. A/E's Inspection: The A/E will make final inspection:
   1. Within 10 days after receipt of certification.
   2. Together with Owner and Contractor.

C. A/E's Determination of Final Completion:
   1. Should A/E consider the Work complete and ready for final payment in accordance with the requirements of the Contract Documents, A/E shall request Contractor to make Project closeout submittals.
   2. Should A/E consider the Work not complete and ready for final payment:
      a. A/E shall notify Contractor in writing stating the reasons.
      b. Contractor:
         1) Take immediate steps to remedy the stated deficiencies.
         2) Send a second written notice to A/E certifying that the Work is complete.
      c. A/E and Owner will reinspect the Work.

1.5 REINSPECTION COSTS

A. Should A/E be required to perform second inspections because of failure of the Work to comply with the original certifications of Contractor, Owner will compensate A/E for additional services and deduct the amount paid from payment or payments to Contractor.

1.6 ADDITIONAL INSPECTION COSTS

A. Substantial Completion: Owner will compensate A/E for inspection services rendered between the scheduled date of Substantial Completion and the actual date of Substantial Completion and deduct the amounts paid from payment or payments to Contractor.

B. Final Completion: Owner will compensate A/E for inspection services rendered between the scheduled date of final completion and the actual date of final completion and deduct the amounts paid from payment or payments to Contractor.
1.7 CLOSEOUT SUBMITTALS

A. Contractor:
1. Provide closeout submittals as required in the Contract Documents.
2. These submittals shall include, but not necessarily be limited to:
   a. Project record documents.
   b. Operation and maintenance manuals.
   c. Guarantees.
   d. Spare parts and maintenance materials.
   e. Instruction in operation of all systems.

1.8 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

A. Affidavits:
1. Submit with final Application for Payment an affidavit of payment of debts and release of claims.
2. Affidavit shall include:
   a. Contractor's release or waiver of lien.
   b. Consent of surety of final payment.
   c. Separate releases or waivers of liens for Subcontractors, Suppliers and others with lien rights
      against property of Owner together with a list of those parties.

B. Execution: All submittals shall be duly executed before delivery to A/E.

1.9 FINAL ADJUSTMENT OF ACCOUNTS

A. Final Statement: Submit a final statement of accounting, which reflects all adjustments, to A/E. This
statement shall contain the following:
2. Additions and deductions.
3. Total Contract Price as adjusted.
4. Previous payments.
5. Sum remaining due.

B. Final Change Order: Contractor will prepare a final Change Order reflecting approved adjustments to the
Contract Price not previously made by Change Orders.

1.10 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit a final Application for Payment in accordance with the requirements of the Contract
Documents.

B. Disposition of Final Application for Payment:
1. If the final Application for Payment and the Work are acceptable in accordance with the Contract
   Documents:
   a. A/E, within 10 days after receipt of the Application for Payment:
      1) Submit to Owner a written recommendation for payment.
      2) Submit to Owner and Contractor a written notice that the Work is acceptable subject to the
         provisions of the General Conditions.
   b. Owner will, within 30 days after receipt of the Application for Payment and A/E's
      recommendation in accordance with the Contract Documents, pay to Contractor the amount
      recommended.

2. If the Application for Payment, the Work or both are unacceptable:
   a. A/E will return the Application for Payment to Contractor, indicating in writing the reasons for
      refusing to recommend final payment.
   b. Contractor shall make the necessary corrections and resubmit the Application for Payment.
3. Final Completion Delayed:
   a. Upon receipt of Contractor’s final Application for Payment and recommendation by A/E, Owner shall make payment of the balance due for that portion of the Work fully completed and accepted if A/E confirms that final completion of the Work is significantly delayed through no fault of Contractor.
   b. Payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.
   c. Contractor shall submit with the Application for Payment written consent of surety if the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

END OF SECTION 01 77 00
SECTION 01 78 39 – PROJECT RECORD DOCUMENTS

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 procedures for the maintenance, recording and submittal of Project record documents.

1.3 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Storage:
   1. Store documents and Samples in Contractor's field office apart from documents used for construction.
   2. Provide files and racks for storage of documents.
   3. Provide locked cabinet or secure storage space for storage of Samples.

B. Filing: File record documents in accordance with CSI Masterformat.

C. Maintenance:
   1. Maintain documents in a clean, dry, legible condition and in good order.
   2. Do not use record documents for construction purposes.

D. Availability: Make documents and Samples available at all times for inspection by Engineer.

1.4 RECORDING

A. Labeling: Label each document "PROJECT RECORD" in neat large printed letters.

B. Recording:
   1. Record actual revisions to the Work.
   2. Record information concurrently with construction progress.
   3. Do not conceal any work until required information is recorded.

C. Drawings:
   1. Legibly mark, with notes or graphic representations, to record actual construction.
      a. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
      b. Field changes of dimension and detail.
      c. Changes made by Field Order, Work Change Directive or Change Order.
      d. Details not on original Contract Drawings.
   2. After A/E's review of the record drawings, transfer all marks to electronic documents provided by A/E.

D. Specifications and Addenda:
   1. Legibly mark each Section to record:
      a. Manufacturer, trade name, catalog number, and Supplier of each Product and item of equipment actually installed.
      b. Changes made by Field Order, Work Change Directive or Change Order.

1.5 SUBMITTAL

A. Delivery: At Contract closeout, deliver record documents to A/E for Owner.
B. Transmittal Letter:
1. Accompany submittal with transmittal letter in duplicate, containing:
   a. Date.
   b. Project title and number.
   c. Contractor's name and address.
   d. Title and number of each Record Document.
   e. Signature of Contractor or their authorized representative.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

END OF SECTION 01 78 39
SECTION 07 84 13 - PENETRATION FIRESTOPPING

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. Penetrations in fire-resistance-rated walls.
   2. Penetrations in horizontal assemblies.

1.3 SUBMITTALS

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

B. Product Schedule: For each penetration firestopping system. Include location and design designation of qualified testing and inspecting agency.

C. Qualification Data: For qualified Installer.

D. Installer Certificates: From Installer indicating penetration firestopping has been installed in compliance with requirements and manufacturer's written recommendations.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for penetration firestopping.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Global according to FM Global 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with its "Qualified Firestop Contractor Program Requirements."

B. Installer Qualifications: A firm experienced in installing penetration firestopping similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its penetration firestopping products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.

C. Fire-Test-Response Characteristics: Penetration firestopping shall comply with the following requirements:
   1. Penetration firestopping tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
   2. Penetration firestopping is identical to those tested per testing standard referenced in "Penetration Firestopping" Article. Provide rated systems complying with the following requirements:
      a. Penetration firestopping products bear classification marking of qualified testing and inspecting agency.
      b. Classification markings on penetration firestopping correspond to designations listed by the following:
         1) UL in its "Fire Resistance Directory."
         2) FM Global in its "Building Materials Approval Guide."
         3) Insert name of qualified testing and inspecting agency.
1.5 PROJECT CONDITIONS

A. Environmental Limitations: Do not install penetration firestopping when ambient or substrate temperatures are outside limits permitted by penetration firestopping manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.

B. Install and cure penetration firestopping per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.6 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping is installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Grace Construction Products.
   2. Hilti, Inc.
   5. Specified Technologies Inc.
   6. 3M Fire Protection Products.
   8. USG Corporation.

2.2 PENETRATION FIRESTOPPING

A. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.

B. Penetrations in Horizontal Assemblies: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
   1. F-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated.
   2. T-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.

C. Penetrations in Smoke Barriers: Provide penetration firestopping with ratings determined per UL 1479.

D. W-Rating: Provide penetration firestopping showing no evidence of water leakage when tested according to UL 1479.

E. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

F. VOC Content: Provide penetration firestopping that complies with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
G. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspecting agency for firestopping indicated.
   1. Permanent forming/damming/backing materials, including the following:
      a. Slag-wool-fiber or rock-wool-fiber insulation.
      b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
      c. Fire-rated form board.
      d. Fillers for sealants.
   2. Temporary forming materials.
   5. Steel sleeves.

2.3 MIXING

   A. For those products requiring mixing before application, comply with penetration firestopping manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

   A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.

   B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

   A. Surface Cleaning: Clean out openings immediately before installing penetration firestopping to comply with manufacturer's written instructions and with the following requirements:
      1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping.
      2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping. Remove loose particles remaining from cleaning operation.
      3. Remove laitance and form-release agents from concrete.

   B. Priming: Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

   C. Masking Tape: Use masking tape to prevent penetration firestopping from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing firestopping's seal with substrates.

3.3 INSTALLATION

   A. General: Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

C. Install fill materials for firestopping by proven techniques to produce the following results:
   1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
   2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
   3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 CLEANING AND PROTECTION

A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping and install new materials to produce systems complying with specified requirements.

3.5 PENETRATION FIRESTOPPING SCHEDULE

A. Firestopping for Metallic Pipes, Conduit, or Tubing:
   1. UL-Classified Systems: C-AJ.

B. Firestopping for Nonmetallic Pipe, Conduit, or Tubing:
   1. UL-Classified Systems: C-AJ.

C. Firestopping for Electrical Cables:
   1. UL-Classified Systems: C-AJ.

END OF SECTION 07 84 13
SECTION 26 05 00 – 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. This Section includes the following:
   1. Electrical equipment coordination and installation.
   2. Sleeves for raceways and cables.
   3. Sleeve seals.
   5. Duct seal.
   6. Common electrical installation requirements.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with
   1. NECA 1 - Standards Practices for Good Workmanship in Electrical Construction.
   2. NEC – National Electrical Code (NFPA 70).

1.4 DEFINITIONS

A. EPDM:  Ethylene-propylene-diene terpolymer rubber.

1.5 SUBMITTALS

A. Product Data: For sleeve seals.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration, damage, contamination with foreign matter, and damage by weather or elements, and according to Manufacturer's directions.

C. Store materials indoors and protect from weather. When necessary to store outdoors, elevate materials above grade and enclose with durable, weather tight wrapping.

D. Reject damaged, deteriorated or contaminated material and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.

1.7 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 ensure that mounting heights and locations of electrical equipment do not interfere with all other building appurtenances such as, but not limited to, containment areas, special coatings, and other equipment.
   3. To allow easy access and disconnection of electrical equipment while ensuring the least amount of interference with other installations.
4. To allow right-of-way for piping and conduit installed at required slopes.
5. To ensure that connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and outside of the dedicated working and access space of other equipment.

B. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

PART 2 - PRODUCTS

2.1 SLEEVES FOR RACEWAYS AND CABLES

A. 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 GROUT

A. Nonshrink; recommended for interior and exterior for sealing openings in non-fired-rated walls or floors.


C. Design Mix: 5,000 psi, 28 day compressive strength.

D. Packaging: Premix and factory packaged.

2.3 DUCT SEAL

A. Description: UL listed, pliable, non-hardening, non-corrosive, weather-proof putty material, designed as a moisture barrier for weather-sealing service entries, electrical cables, and conduit ducts.

   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Arnco Corp. - Hydra-Seal.
      b. Ilsco Corp. – DS Duct Seal.
      c. JM Clipper – Duxseal.
      d. OZ/Gedney Co. – DUX.
      e. RectorSeal - Duct Seal Compound.
      f. Thomas & Betts Corp. - DX.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1 and NEC.

B. 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.

C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in a manner as to facilitate future disconnecting with minimum interference with other items in the vicinity.

D. 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, or wireways 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 otherwise indicated on the Drawings.

H. Seal space outside of sleeves with grout for penetrations of concrete and masonry. 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.

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. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel 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.

3.3 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."

3.4 DUCT SEAL INSTALLATION

A. Where conduits penetrate into the building, seal duct openings at conduit termination points with duct seal for all conduits entering the building to prevent migration of water and gases into the building and to prevent the condensation of water vapor inside the enclosures where the conduits terminate.

B. Duct seal shall be applied after all cables have been installed.

C. Install sealing material in strict accordance with the sealant Manufacturer's printed instructions.

D. Where conduit will be simultaneously exposed to different temperatures, such as where it passes through the outside wall of a heated building or between two different rooms, the inside of the conduit shall be sealed with duct seal. Silicone or similar calking shall not be used as a substitute for duct seal.

END OF SECTION 26 05 00
SECTION 26 05 20 – CONDUCTORS AND CABLES – 600V AND BELOW

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 furnishing and installation of all electrical conductors, cables, splices, and connectors.

B. Major Systems Include:
   1. 600V and below service entrance, feeders and electrical distribution.
   2. Branch circuit wiring.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the standards of the following organizations as applicable to materials, construction and testing of wire cables:
   1. NEMA - National Electrical Manufacturer Association Standards.
   2. IEEE Standards.
   3. Insulated Cable Engineers Association - Standards.
   4. ASTM Standards.
   5. NEC - National Electric Code

1.4 SUBMITTALS

A. Product Data: For each type of product.

1.5 QUALITY ASSURANCE

A. Fabrication and Installation Personnel Qualifications:
   1. Trained and experienced in the fabrication and installation of the materials and equipment.
   2. Knowledgeable of the design and the reviewed submittals.

B. Manufacturers: Firms regularly engaged in the manufacture of electrical conductor and cable products of the types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration or damage, contamination with foreign matter, damage by weather or elements, and in accordance with Manufacturer's directions.

C. Store materials indoors and protect from weather. When necessary to store outdoors, elevate materials above grade and enclose with durable, watertight wrapping.

D. Reject damaged, deteriorated, or contaminated materials and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.
PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Except as otherwise indicated, provide conductors, cables, and connectors of Manufacturer's standard materials, as indicated by published product information; designed and constructed as recommended by the Manufacturer and as required for the installation.

B. Power Wire:
   1. All conductors and cable s shall be new with a minimum wire size of No. 12 AWG. Manufacturer's name, type, and size shall be permanently marked on the outer covering at regular intervals and delivered in complete coils or reels.
   2. Provide factory fabricated conductors of size, rating, material, and type as indicated for each service. Where not indicated, provide proper selection as determined by installer to comply with installation requirements and with NEC standards, from only following types and conductors:
      a. Type THHN/THWN, 600 Volt, 75/90 Degrees C Rated with Nylon Jacket: Stranded copper for all sizes.
      b. Bare Conductors: Stranded copper for all sizes.

C. Control Cable: No. 14 AWG minimum, type THHN/THWN.

D. Power Wiring Cable Accessories: For Connectors:
   1. Wing nuts by Ideal.
   2. Stan-Kon by Thomas & Betts.
   4. Compression Type 53200 by Thomas & Betts.
   5. Hydent by Burndy.
   6. Insulated multi-cable mechanical connector blocks by Polaris, or Ilsco.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
   1. Install electrical conductors, cables, and connectors as indicated on the Drawings, in accordance with the Manufacturer's written instructions, the applicable requirements of NEC and the National Electrical Contractors Association's "Standard of Installation," and in accordance with recognized industry practices to ensure that products serve the intended functions.
   2. Conductors and cables shall be sized in accordance with the Drawings or, in the absence thereof, in accordance with NEC requirements. Except where indicated herein, conductor sizes greater than No. 12 AWG are indicated on the Drawings.
   3. Provide a dedicated grounded conductor (neutral) for each new circuit. Unless indicated otherwise on the Drawings, shared neutrals are not allowed.
   4. Provide an equipment grounding conductor in all raceways. Conductor shall be sized in accordance with the National Electrical Code.

B. Voltage Drop Compensation:
   1. Provide No. 10 AWG conductors in lieu of No. 12 AWG conductors to compensate for voltage drop as follows:
      a. For each 120V, 20 ampere branch circuit that exceeds 100 feet in length between the branch circuit panelboard and the last outlet.
   2. When conductor size is increased to compensate for voltage drop, provide equipment grounding conductor increased in size in accordance with NEC.

C. Installation Procedures:
   1. Each conduit shall be free of moisture and debris before conductors are installed.
   2. Remove moisture from conduits by swabbing.

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Conductors and Cables – 600V and Below
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3. Install conductors so insulation is not damaged. Replace all conductors that are damaged.
4. Install conductors and cables only in code conforming raceway.
5. Pull conductors together where more than 1 conductor is being installed in a raceway.
6. Use manufacturer-approved pulling compound or lubricant, where necessary. Compound shall not deteriorate conductor and insulation. Compounds shall be UL listed.
7. Use a pulling means, including fish tape, cable or rope, and basket-weave wire/cable grips, that will not damage the raceway or the wire.
8. Keep conductor splices to a minimum.
9. Install splices and taps which have equivalent or better mechanical strength and insulation as the conductor.
10. Use splice and tap connectors which are compatible with the conductor material.
11. Make all joints, splices, and connections only at accessible junction or outlet boxes, never inside conduit or fitting. Make splices in No. 10 AWG and smaller wire with insulated spiral mechanical connectors.
12. Make splices in No. 8 AWG and larger copper wire with compression type mechanical connectors.
13. Insulate all joints at splices with “Scotch” brand electrical pressure sensitive tape to 150% of conductor insulation value.
14. Where exposed cables are installed, cables shall be installed parallel and perpendicular to exposed structural members and building lines.
15. Do not lace, strap or tie feeder or branch circuit conductors together in panels, switchboards, variable speed drives, motor control centers, automatic transfer switches, boxes, and wireways.
16. Use color coded conductors as follows:
   a. Phases: Black-red-blue (under 150V to ground).
   b. Neutral: White identified (feeders); White (branch circuits).
   c. Ground: Green identified (feeders); Green (branch circuits).
17. Support conductors in vertical raceways in accordance Division 26 Section “Hangers and Supports for Electrical Systems.”
18. Conductor ampacity derating shall be adhered to for all conductors in accordance with the National Electrical Code.

3.2 FIELD QUALITY CONTROL

A. General:
1. Prior to energization, check conductors and cables for continuity of circuitry and for short circuits. Correct malfunctions when detected.
2. Subsequent to conductor and cable hook-ups, energize circuitry and demonstrate functioning in accordance with requirements.

END OF SECTION 26 05 20
SECTION 26 05 27 – GROUNDING AND BONDING

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 furnishing and installation of a complete and continuous grounding system.

1.3 DESIGN AND PERFORMANCE REQUIREMENTS
A. All equipment, raceway systems, , and power outlets, shall be grounded.

1.4 QUALITY ASSURANCE
A. Fabrication and Installation Personnel Qualifications:
   1. Trained and experienced in the fabrication and installation of the materials and equipment.
   2. Knowledgeable of the design.
B. Grounding system shall be in accordance with the current National Electrical Code.

PART 2 - PRODUCTS

2.1 MATERIALS
A. General: A portion of the required materials for grounding systems are specified in the Division 26 – Electrical Sections.

PART 3 - EXECUTION

3.1 DISTRIBUTION SYSTEM GROUNDING
A. Install green, insulated, equipment grounding conductors in all raceways including all flexible metal conduits and all non-metallic raceways. Green, insulated, equipment grounding conductors shall be installed with all feeders and branch circuits.
B. Circuit Grounding: Install grounding bushings, grounding studs, and grounding jumpers at pull boxes, panelboards, and all like equipment.
C. Bonding Jumpers:
   1. Provide green insulation, size correlated with overcurrent device protecting the wire, attached to grounding bushings on conduits, to lugs on boxes, and other enclosures.
D. FMC and LTFMC: Install separate grounding conductor in FMC and LTFMC.
E. Metallic Conduit: When bare grounding electrode conductors are enclosed in metallic conduit, the conduit shall be bonded to the grounding electrode conductors at both ends.
F. Metallic Conduit: Install separate equipment grounding conductor sized in accordance with the National Electrical Code in all conduit runs.
Grounding and Bonding

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G. Expansion Joints: Install a bonding jumper around expansion fittings in metallic conduit to maintain ground continuity.

END OF SECTION 26 05 27
SECTION 26 05 29 – 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 furnishing and installation of the following:
   1. Hangers and supports for electrical equipment and systems.

1.3 DEFINITIONS

A. Electrical Supports: Angles, channels, brackets, and mounting accessories for supporting all conduit, and other electrical equipment which are hung or mounted above floor.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

A. This Section defines general criteria for the selection and installation of supporting devices, but does not cover all types specifically required for the Project.

B. Choose or design supporting devices in accordance with these general criteria.

1.5 QUALITY ASSURANCE

A. Fabrication and Installation Personnel Qualifications:
   1. Trained and experienced in the fabrication and installation of the materials and equipment.
   2. Knowledgeable of the design and the reviewed submittals.

B. Regulatory Agencies Requirements:
   1. Provide supporting devices listed by Underwriters' Laboratory for their application as installed.
   2. Comply with National Electrical Code (NFPA 70) as applicable to construction, installation, and requirements for supporting devices.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration or damage, contamination with foreign matter, damage by weather or elements, and in accordance with Manufacturer’s directions.

C. Store materials indoors and protect from weather. When necessary to store outdoors, elevate materials above grade and enclose with durable, watertight wrapping.

D. Reject damaged, deteriorated, or contaminated material and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.
PART 2 - PRODUCTS

2.1 MATERIALS

A. Conduit Supports:
1. Where information indicated on Drawings conflicts with information herein, the more stringent requirements shall take precedence and the better quality or greater quantity of work shall be provided.
2. Single Runs: Galvanized conduit straps or ring bolt type hangers with spring clips. Do not use plumber’s perforated straps.
3. Multiple Runs: Conduit rack with 25% spare capacity.
4. Vertical Runs: Channel support with conduit fittings.
5. Manufacturers:
   a. Cooper B-Line; a division of Cooper Industries
   b. ERICO International Corporation.
   c. Allied Support Systems; Power-Strut Unit.
   d. GS Metals Corp.
   e. Michigan Hanger Co., Inc.; O-Strut Div.
   f. National Pipe Hanger Corp.
   g. Thomas & Betts Corporation.
   h. Unistrut; Tyco International, Ltd.
   i. Wesanco, Inc.
   j. Or equal.

B. Mounting, Anchoring, and Attachment Components
1. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened Portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
2. 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.
3. Manufacturers:
   a. Hilti, Inc.
   b. ITW Construction Products.
   c. MKT Fastening, LLC.
   d. Or equal.

C. Supports for Conductors in Vertical Conduit:
1. Install in compliance with NEC article 300.19.
2. 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.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
1. Layout to maintain headroom, neat mechanical appearance, and to support equipment loads.
2. Secure Engineer's approval before welding or bolting to steel framing or anchoring to concrete structure.
3. Where equipment is to be suspended from cast-in-place concrete construction, set approved concrete inserts in formwork to receive hanger rods. Where equipment is to be suspended from metal deck and beam or joist construction, support equipment from beams or joists only.

END OF SECTION 26 05 29
SECTION 26 05 34 – RACEWAYS 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 furnishing and installation of conduits and fittings for electrical wiring.

1.3 QUALITY ASSURANCE

A. Fabrication and Installation Personnel Qualifications:
    1. Trained and experienced in the fabrication and installation of the materials and equipment.
    2. Knowledgeable of the design.

B. Regulatory Agencies Requirements:
    1. ACI – American Concrete Institute – Standards pertaining to conduits embedded in concrete (Section 6.3 in ACI 318 – Building Code Requirements for Structural Concrete and Section 6.3 in ACI 350R – Environmental Engineering Concrete Structures.)
    2. NEMA – National Electrical Manufacturer’s Association – Standards pertaining to raceways.
    3. NEC – National Electric Code – As applicable to construction and installation of conduit system.
    4. Provide conduit which is listed and labeled by Underwriters’ Laboratories.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration or damage (e.g., bending, end damage, finish scoring), contamination with foreign matter, damage by weather or elements, and in accordance with Manufacturer’s directions.

C. Store materials indoors and protect from weather. When necessary to store outdoors, elevate materials above grade and enclose with durable, watertight wrapping. Provide color coded end cap thread protectors on exposed threads of threaded metal conduit.

D. Reject damaged, deteriorated, or contaminated material and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Rigid Steel Conduit (RSC): Galvanized steel, heavy wall conduit with threaded fittings, 1/2-inch trade size minimum, insulated bushings.

B. Electrical Metallic Tubing (EMT):
    1. Thin wall, hot galvanized, steel tubing, 1/2-inch trade size minimum with insulated throat steel connector.
    2. Color Coded
       a. Red for fire alarm wiring.
    3. Fittings: Steel Compression or setscrew type (die cast fittings are expressly prohibited).
C. Surface Metal Raceway (SMR):
   1. One-piece steel raceway with a factory assembled base and cover. Finish shall be ivory scratch resistant, suitable for field painting. Manufacturer: V700 surface metal raceway as manufactured by Wiremold, or equal.
   2. UL listed.
   3. Fittings, couplings, junction boxes, and accessories as required. Color to match raceway.
   4. Boxes for surface mounted raceway shall match raceway.

D. Flexible Metal Conduit (FMC): 1/2-inch trade size minimum with galvanized steel flexible conduit insulated throat steel connectors.

E. Liquid Tight Flexible Metal Conduit (LTFMC): 1/2-inch trade size minimum. galvanized steel flexible conduit with flexible, moisture-proof PVC jacket and liquid tight connectors.

F. Joint Compound for RSC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

G. Conduit Hubs for RSC:
   1. Suitable for environment served.
   2. Grounding screw.
   3. O-ring gasket.
   5. Manufacturer:
      a. Cooper Myers Hubs.
      b. Thomas & Betts.
      c. Killark.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Unless otherwise specified or indicated on the Drawings, conceal conduit to the extent possible.
   1. In finished areas where conduit cannot physically be concealed due to existing conditions, provide surface metal raceway. Finished areas are generally, but not always: above grade, heated spaces with finished walls (e.g., painted, drywall, etc.), finished floors (e.g., painted concrete, carpet, tile, etc.), and finished ceilings (e.g., drywall, suspended ceiling grids, wood, etc.).
   2. Conduit shall not be concealed within tank walls, slabs, or ceilings.

B. Exposed conduit permitted in:
   1. Service equipment rooms.
   2. Rooms without finished ceilings (overhead only).
   3. Unfinished rooms.

C. Install conduit products in accordance with:
   1. The Drawings.
   2. The Manufacturer’s written instructions.
   3. Applicable requirements of NEC and National Electrical Contractors Association’s “Standard of Installation.”
   4. Recognized industry practices to ensure that products serve intended function.

D. Conduit Joints: Cut square, reamed smooth and drawn up tight.

E. Threaded Conduit Joints, Exposed to Wet, Damp, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joint. Follow compound manufacturer’s written instructions.

F. Bends:
   1. Number per run for conduit that support feeder and branch circuits: Do not exceed the equivalent of 4 quarter bends (360 degrees) between pull points.
2. Number per run for conduit that supports data/communications cabling: Do not exceed the equivalent of 2 quarter bends (180 degrees) between pull points.
3. Make bends and offsets so as not to reduce the inner diameter of the conduit.
4. To the extent possible, avoid using large junction boxes as 90 degree junctions.

G. Routing:
1. Concealed Conduits: Run in a direct line with long sweep bends and offsets.
2. Exposed Conduits: Run parallel to, and at right angles to, building lines.
3. Run continuous from outlet to outlet and from outlets to cabinets, pull or junction boxes.
4. Secure to all boxes and cabinets with locknuts and bushings in such a manner that each system is electrically continuous throughout.

H. Cap conduit ends to prevent entrance of foreign materials during construction.

I. Conduit entering control panels shall not obstruct internal components and shall allow for neat and workmanlike wire management.

J. Completely install all conduit systems before installing conductors.

K. Provide listed sealant in underground and above grade conduit that is exposed to temperature differences to prevent the passage of air and condensation.

L. Support:
1. Where information on Drawings conflicts with information herein, the more stringent requirements shall take precedence and the better quality or greater quantity of work shall be provided.
2. Adequately support conduit from structural elements of the building.
3. Do not drill or tap structural building steel without approval from Engineer.
4. Do not rest raceways or wiring systems on, nor support it from, ceiling suspension systems, ceiling tiles or mechanical equipment including, but not necessarily limited to ductwork and fans.
5. Conduit shall be supported in accordance with the NEC and Division 26 Section “Hangers and Supports for Electrical Systems.”

M. Provide conduit expansion couplings where conduits cross building or structure expansion joints.

N. FMC and LTFMC Installation:
1. Provide separate grounding conductor in accordance with Division 26 Section “Grounding and Bonding.”
2. Flexible conduit shall not be used to connect to non-moving, non-vibrating, or non-adjustable equipment.

O. Firestopping:
1. Firestop all conduit penetrations of fire rated barriers by using approved material to ensure integrity of the rating.

3.2 CONDUIT SCHEDULE

A. Where information on Drawings conflict with information herein, the more stringent requirements take precedence and the better quality or greater quantity of work shall be provided.

B. Branch Circuits and System Conduits:
1. Above Slab or Grade:
   a. Exposed Conduit Below 10'-0" AFF: RSC or IMC where subject to physical damage. EMT where not subject to physical damage.
   b. Exposed Conduit Above 10'-0" AFF: EMT.
   c. Concealed In Walls: EMT.
   d. Concealed Above Ceiling: EMT.
   e. Wet Locations: RSC.
C. Communications conduits in dry locations not subject to physical damage and not installed underground nor in or below concrete: EMT.
   1. Communication conduits shall be bonded.
   2. Communication sleeves, provide plastic bushings.
   3. Communication conduits shall be 3/4-inch minimum.

D. Connection To Equipment:
   1. Vibrating Equipment (including, but not necessarily limited to motors and transformers):
      a. Motors:
         1) Dry Locations: FMC.
         2) Wet or Damp Locations: LTFMC.

E. Provide separate raceway systems for:
   1. Normal power wiring.
   2. Communication wiring.
   3. Fire alarm system wiring.

F. Do not utilize panelboards, motor control centers, distribution equipment or like devices as raceways.

END OF SECTION 26 05 34
SECTION 26 05 35 – 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 the furnishing and installation of all electrical boxes and the major items listed below:
   1. Outlet boxes.
   2. Junction boxes.
   3. Pull boxes.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
   1. NEMA - National Electrical Manufacturer's Association: Standards as applicable to nonmetallic fittings for underground installation.
   2. NECA - National Electrical Contractor's Association's: Applicable portions of "Standard of Installation".

1.4 QUALITY ASSURANCE

A. Fabrication and Installation Personnel Qualifications:
   1. Trained and experienced in the fabrication and installation of the materials and equipment.
   2. Knowledgeable of the design and the reviewed submittals.

B. Regulatory Agencies Requirements:
   1. Provide boxes which are listed and labeled by Underwriters' Laboratories.
   2. NEC - National Electrical Code (NFPA 70) - As applicable to construction and installation of electrical boxes.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration or damage, contamination with foreign matter, damage by weather or elements, and in accordance with Manufacturer's directions.

C. Store materials indoors and protect from weather. When necessary to store outdoors, elevate materials above grade and enclose with durable, watertight wrapping.

D. Reject damaged, deteriorated, or contaminated materials and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Interior Outlet Boxes:
   1. Galvanized steel outlet boxes of the type, shape, and size, including depth of box, to suit each respective location and installation; constructed with stamped knockouts in back and sides, and with threaded holes with screws for securing box covers or wiring devices.
B. Interior Outlet Box Accessories:
   1. As required for each installation, including mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps, and metal straps for supporting outlet boxes. Accessories shall be compatible with outlet boxes being used and meet the requirements of individual wiring situations.
   2. Choice of accessories is installer's option.

C. Weatherproof Outlet Boxes:
   1. Corrosion-resistant cast metal, weatherproof outlet boxes, of the type, shape, and size, including depth of box, suitable for each application, with threaded conduit ends.

D. For Ceilings: 4-inch octagonal boxes for receiving 3 or less 1/2-inch conduits.

E. For Flush Mounting In Walls:
   1. 4-inch square boxes with matching plaster cover for single or 2 gang outlets.
   2. For larger boxes use solid type or special units.
   3. In masonry, use deep boxes.

F. Surface Mounted: 4-inch square.

G. Junction and Pull Boxes:
   1. Sheet steel junction and pull boxes, with screw-on covers; of the type and shape and size to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws, and washers. Dry interior location boxes shall have baked enamel finish. Damp location and exterior boxes shall have galvanized finish.

H. Flush Mounted Pull Boxes: Provide overlapping covers with flush-head cover retaining screws, prime coated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
   1. Install electrical boxes as indicated, in compliance with NEC requirements and in accordance with the Manufacturer's written instructions and recognized industry practices to ensure that the boxes and fittings serve the intended purposes.
   2. Provide weatherproof outlet boxes for interior and exterior locations exposed to weather or moisture.
   3. Provide knockout closures to cap unused knockout holes where blanks have been removed.
   4. Locate boxes and conduit bodies so as to ensure accessibility of electrical wiring.
   5. Secure boxes rigidly to the substrate upon which they are being mounted, or solidly embed boxes in concrete or masonry.
   6. Mount outlet boxes flush in areas other than mechanical rooms, electrical rooms, and above removable ceilings.
   7. Adjust position of outlets in finished masonry walls to suit masonry course lines.
   8. Do not install boxes back-to-back in same wall. Coordinate cutting of masonry walls to achieve neat openings for boxes.
   9. Do not use sectional or handy boxes. For boxes mounted in exterior walls install insulation behind outlet boxes to prevent condensation in boxes.
  10. Locate pull boxes and junction boxes above removable ceilings or in electrical rooms, utility rooms, or storage areas such that boxes will be accessible after completion of building.
  11. All boxes shall have covers installed at completion of construction.

END OF SECTION 26 05 35
SECTION 26 05 53 – 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. This Section includes the furnishing and installation of proper identification for electrical system components.

B. Items requiring identification or labeling include:
   1. Cables and conductors.
   2. Conduit systems.
   3. Controls:
      a. Variable frequency drives.
      b. 
   4. Distribution Equipment:
      a. Disconnect switches.
      b. Panelboards.
   5. Fire alarm system equipment.

1.3 SUBMITTALS

A. Nameplate schedule identifying each device to be labeled and project specific label text.

PART 2 - PRODUCTS

2.1 ELECTRICAL LABELS

A. Provide engraved laminated plastic nameplate to identify each piece of electrical equipment:
   1. Nameplate shall have 3/8-inch minimum black letters on a white background.
   2. Punched or drilled for mechanical fasteners.

B. Provide printed labels by Brady or T&B to identify conductors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
   1. Attach nameplates directly to each piece of electrical equipment. In finished areas of building, install nameplates behind enclosure door where possible.
   2. Where several conductors pass through a pull box, junction box, or enclosure, provide wire labels. Group wires before labeling.

B. Cables and Conductors: In accordance with Division 26 Section “Conductors and Cables – 600V and Below.”

C. Conduit Systems:
   1. Junction boxes used for fire alarm system wiring shall be red.
   2. Provide label inside each junction and pull box identifying circuit numbers for all conductors contained inside the box. Labeling shall be printed neatly with permanent, waterproof, black ink marker.
D. Fire Alarm System Equipment: Provide label attached to enclosure cover. Label shall identify name of device as indicated on fire alarm system riser diagram or electrical drawings (example, “FIRE ALARM CONTROL PANEL”).

END OF SECTION 26 05 53
SECTION 28 31 00 – FIRE DETECTION AND ALARM

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 furnishing and installation of a complete and functional building fire detection and alarm system.

B. Division of Work:

1. In accordance with the General Conditions, Contractor is responsible for dividing the Work among the Subcontractors and Suppliers and for delineating the work to be performed by specific trades. The following are suggestions as to how the Work may be divided. This is not a complete list of all the work:
   a. Electrical Subcontractor:
      1) Coordinate equipment.
      2) Install and wire all system components.
   b. Wire and install all duct smoke detectors. Fire Alarm System Supplier: Test completed system.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of the Section shall comply with the following:
   1. NFPA Standards:
      a. NFPA 70 - 2011 National Electric Code, including Part 8 amendments.
   2. UL Standards
      a. UL 864 - Control Units for Fire Protective Signaling Systems.
      b. UL 268 - Smoke Detectors for Fire Protective Signaling Systems.
      d. UL 464 - Audible Signaling Appliances.
      e. UL 1971 - Signaling Devices for the Hearing-Impaired.
      f. UL 1481 - Power Supplies for Fire Protective Signaling Systems.
      g. UL 1635 - Digital Alarm Communicator System Units.
   4. WSU Office of Fire Safety
   5. Federal Codes and Regulations.
   6. Americans with Disabilities Act (ADA).
      a. ISO-9000.
      b. ISO-9001.

1.4 SYSTEM DESCRIPTION

A. Provide and install a new fire detection and alarm system and fire alarm system devices as indicated on Drawings and this specification. This specification describes an addressable Fire Detection and alarm signaling system. The control panel shall be intelligent device addressable, analog detecting, low voltage and modular, with digital communication techniques, in full compliance with all applicable codes and standards. The features and capacities described in this specification are required as a minimum for this project and shall be furnished by the successful contractor.
1.5 DESIGN AND PERFORMANCE REQUIREMENTS

A. System shall be programmed to provide early detection of fire, to notify building occupants, notify the WSU Public Safety Office, summon local fire department, override HVAC operation, and activate auxiliary systems to inhibit the spread of smoke and fire and to facilitate the safe evacuation of building occupants.

B. The system shall include all required hardware, raceways, interconnecting wiring and software to accomplish the requirements of this specification and the contract drawings, whether or not specifically itemized herein.

C. All equipment furnished shall be new and the latest state-of-the-art products of a single manufacturer, engaged in the manufacturing and sale of analog fire detection devices for over ten years.

D. The system as specified shall be supplied, installed, tested and approved by the local Authority Having Jurisdiction, and turned over to the owner in an operational condition.

E. In the interest of job coordination and responsibilities, the installing contractor shall contract with a single supplier for fire alarm equipment, engineering, programming, inspection and tests, and shall be capable of providing a “UL Listing Certificate” for the complete system.

1.6 UNIT PRICES

A. Refer to specification section 01 22 00 for unit price requirements.

1.7 GENERAL

A. The system shall be a complete, electrically supervised fire detection and notification system, with a microprocessor based operating system having the following capabilities, features, and capacities:

1. Support of mobile test system capable of providing point test reports in NFPA standard format without manual report entries.

2. The control panel shall allow control and monitoring from a wireless handheld display device during maintenance, inspection and troubleshooting tasks
   a. The control panel shall allow complete control and monitoring from a wireless handheld display device during one-man testing of the system
   b. Testing supported should be real smoke testing of devices, automatically logged and made available in NFPA format reports. Manual test entries will not be accepted.

3. System shall provide an output port for monitoring purposes by external systems. Communications to an external system shall be RS-232 or RS-485 communications.

4. A single node or system shall support at least 50 remote transponders

5. At least 59 nodes shall be networkable.

6. Communications between network nodes, each supporting an interactive, self-standing, intelligent local control panel, with system wide display. Any network node shall be capable of supporting a local system in excess of 4000 input/output points.

7. The local system shall provide status indicators and control switches for all of the following functions:
   a. Audible and visual notification alarm circuit zone control.
   b. Status indicators for sprinkler system water-flow and valve supervisory devices.
   c. Any additional status or control functions as indicated on the drawings, including but not limited to: emergency generator functions, fire pump functions, door unlocking and security with bypass capabilities.

8. The system shall be UL 1076 listed for monitoring and reporting security System Zoning.

9. Each intelligent addressable device or conventional zone on the system shall be displayed at the Central Alarm Receiving Terminal and the local fire alarm control panel by a unique alphanumeric label identifying its location.

10. The FACP shall have the ability to identify 4 levels of alarm for each of the 15 sectors of VFT-15 when used for Rack Level monitoring.
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B. FACP with Digital Voice Evacuation - The system shall be complete, electrically supervised fire detection and evacuation system using one way communication and firefighters' telephone and smoke control systems with microprocessor-based operating system having the following capabilities, features and capacities:

1. Voice amplification shall be supervised and backed up with like amplifiers. Back up shall be one for one. Backup amplifiers shall not share components and must be fully stand-alone.
2. Amplifiers shall be rated for 25V or 70.7V RMS, 40 watts.
3. Amplifiers shall be rated for 25V or 70.7V RMS, 180 watts.
4. Amplifiers shall be sized as minimum, to accommodate speakers in corridors at 2 watts and other locations 1 watt.
5. The system shall have the capability to support Peer-to-Peer or Master-Slave network and voice configurations.
6. Multiple nodes shall provide peer-to-peer voice capability in order to eliminate a single point of failure.
7. Audio shall be synchronized between nodes in order to take into account common areas.
8. The network, audio, and telephone risers between nodes shall be copper and support Class A loop configuration to allow communication to continue in the event of a fault.
9. Speakers shall have the ability to play coded audio tones.
10. The local system shall provide status indicators and control switches for all of the following functions:
11. Audible and visual notification alarm circuit zone control.
12. Speaker circuit zone control.
14. Any additional status or control functions as indicated on the drawings, including but not limited to: emergency generator functions, fire pump functions, door unlocking and security with bypass capabilities.

C. FACP network compatibility with earlier generation FACPs – The system shall have the ability to be networked to earlier generation systems for purposes of annunciation and control.

D. FACP shall have the ability to interface with earlier addressable devices. Replacement of existing field devices shall be unnecessary for proper system operation.

E. FACP components shall have the ability to be mounted in existing enclosures. Replacement of existing back boxes shall be unnecessary.

F. The system shall provide the following functions and operating features:

1. The FACP and auxiliary power panels shall provide power, annunciation, supervision and control for the system.
2. Provide Class B initiating device circuits.
3. Provide Style 4 signaling line circuits for the network
4. Provide Class B notification appliance circuits. Arrange circuits to allow individual, selective, and all-call voice and visual notification by zone. Notification Appliance circuits shall be zoned to correspond with the building fire barriers and other building features.
5. Stair towers: Each Stair tower NAC shall be separately zoned.
6. Strobes shall be synchronized throughout the entire building.
7. If a voice evacuation system is specified, the system amplifiers shall be configured as distributed, bulk, or a combination of distributed and bulk audio. If necessary, convenience paging and/or background music shall be available via UL-listed speakers.
8. Provide 8 channel for live and recorded voice messaging.
9. Provide 2 channel for live and recorded voice messaging.
10. Provide electrical supervision of the primary power (AC) supply, presence of the battery, battery voltage, and placement of system modules within the control panel.

G. The system shall provide a field test function where one person can test the complete system or a specific area while maintaining full operational function of other areas not being tested. Alarms, supervisory signals and trouble signals shall be logged on the system printer and in system history during the walktest.

H. Alarm functions shall override trouble or supervisory functions. Supervisory functions shall override trouble functions.
I. Fire alarm signal initiation shall be by one or more of the following devices:
   1. Manual pull station
   2. Heat detector
   3. Addressable area smoke detector
   4. Duct smoke detector

J. Activation of any system fire, security, supervisory, trouble, or status initiating device shall cause the following actions and indications at all network Person Machine Interfaces using basic graphics and multiple detail screens.
   1. Fire Alarm Condition:
      a. Audible and visual notification alarm circuit zone control.
      b. Status indicators for sprinkler system water-flow and valve supervisory devices.
      c. Any additional status or control functions as indicated on the drawings, including but not limited to: emergency generator functions, fire pump functions, door unlocking and security with bypass capabilities.
      d. Sound an audible alarm and display a custom screen/message defining the building in alarm and the specific alarm point initiating the alarm in a graphic display.
      e. Log into the system history archives all activity pertaining to the alarm condition.
      f. Print alarm condition on system printer.
      g. Sound the ANSI 117-1 signal with synchronized audible and synchronized strobes throughout the facility.
      h. Audible signals shall be silenced from the fire alarm control panel by an alarm silence switch. Visual signals shall be programmable to flash until system reset or alarm silencing, as required.
      i. A signal dedicated to sprinkler system water flow alarm shall not be silenced while the sprinkler system is flowing at a rate of flow equal to a single head.
      j. The alarm information shall be displayed on a graphic annunciator located where shown on drawing.
      k. Activation of any smoke detector in a single elevator lobby or an elevator equipment room shall, in addition to the actions described, cause the recall of that bank of elevators to the 1st floor and the lockout of controls. In the event of recall initiation by a detector in the first floor lobby, the recall shall be to the alternate floor as determined by the AHJ.
      l. Where indicated on drawings, heat detectors in elevator shaft and machine rooms shall activate an elevator power shunt trip breaker. The heat detectors shall be rated at a temperature below the ratings of the sprinkler heads in respective locations to insure that the power shall be shut off before activation of sprinkler system.
      m. System operated duct detectors as per local requirements shall accomplish HVAC shut down.
   2. Additional system operation for Fire Alarm Condition for Voice:
      a. Audible and visual notification alarm circuit zone control.
      b. A simultaneous message shall be delivered via all alarm speakers installed on the remaining floors indicating the requirement for occupants of these floors to remain alert for further instructions.
      c. A simultaneous message shall be delivered via all alarm speakers installed in stairways and elevators informing occupants of the imminent shutdown of elevator circuits and the expected high traffic load in the stairwells.
      d. An automatic announcement or tone evacuation signal shall be capable of interruption by the operation of the system microphone to give voice evacuation instructions overriding the pre-programmed sequences.
      e. Status lights next to speaker selection switches on the control panel shall indicate speaker circuit selection.
      f. Audible signals shall be silenced from the fire alarm control panel by an alarm silence switch. Visual signals shall be programmed to flash until system reset or alarm silencing, as required by the AHJ.
   3. Supervisory Condition: Duct smoke detector
      a. Display the origin of the supervisory condition report at the local fire alarm control panel graphic LCD display.
      b. Activate supervisory audible and dedicated visual signal.
      c. Audible signals shall be silenced from the control panel by the supervisory acknowledge switch.
      d. Record within system history the initiating device and time of occurrence of the event.
      e. Print supervisory condition to system printer. Audible and visual notification alarm circuit zone control.
4. Trouble Condition
   a. Display at the local fire alarm control panel graphic LCD display, the origin of the trouble condition report.
   b. Activate trouble audible and visual signals at the control panel and as indicated on the drawings.
   c. Audible signals shall be silenced from the fire alarm control panel by a trouble acknowledge switch.
   d. Trouble conditions that have been restored to normal shall be automatically removed from the trouble display queue and not require operator intervention. This feature shall be software selectable and shall not preclude the logging of trouble events to the historical file.
   e. Trouble reports for primary system power failure to the master control shall be automatically delayed for a period of time equal to 25% of the system standby battery capacity to eliminate spurious reports as a result of power fluctuations.
   f. Record within system history: the occurrence of the event, the time of occurrence and the device initiating the event.
   g. Print trouble condition to system printer.
   h. Activate supervisory audible and dedicated visual signal.
   i. Audible signals shall be silenced from the control panel by the supervisory acknowledge switch.
   j. Record within system history the initiating device and time of occurrence of the event.

5. Security Condition:
   a. Display at the local fire alarm control panel graphic LCD display, the origin of the trouble condition report.
   b. The control system shall be capable of bypassing the alarms from an individual security system installed within selected areas. The pass code allowing this function shall be assignable to individual security personnel and each bypass action shall be logged to system history. Intrusion alarms occurring during a bypass period shall be logged to history and displayed but no audible alarm shall occur at the control panel.
   c. The Local Fire Control Panel shall be UL 1076 listed for security purposes.

1.8 DUCT TYPE SMOKE DETECTOR ALARM

A. Upon alarm activation of any duct type smoke detector the following functions shall automatically occur:
   1. The internal audible device shall sound at the control panel or command center.
   2. The LCD display shall indicate all applicable information associated with the alarm condition including zone, device type, device location, and time/date.
   3. All annunciator LCD/LEDs associated with the alarm zone shall be illuminated.
   4. Activate visual strobes and audible appliances on general alarm evacuation.
   5. The visual strobe shall continue to flash until the system has been reset. The visual strobe shall not stop operating when the “Alarm Silence” is pressed.
   6. All automatic events programmed to the alarm point shall be executed and the associated outputs activated.
   7. Transmit signal to the central station with point identification.
   8. Appropriate HVAC equipment shall be turned off until system is reset.

1.9 SUBMITTALS

A. Shop Drawings: For all system components.
   1. Data sheet indicating model number, performance specifications and dimensional data, color and finish.
   2. Details of construction and installation.
   3. Name of manufacturer.
   4. Full system schematic.
   5. Wiring details.
   6. Point-to-point wiring diagram showing all equipment.
   7. Battery calculations. Battery size shall be a minimum of 125% of the calculated requirement.
   8. Floor plan indicating fire alarm system devices only.
   9. Dimension plan indicating all items located inside fire alarm control panel. Plan should indicate future space.
10. Indicate all features indicated in this specification which are not included in the manufacturer's equipment. Label these items as "Exceptions to the Specifications".

11. NAC circuit design shall incorporate a 15% spare capacity for future expansion.

12. Power supply rating justification showing power requirements for each of the system power supplies. Power supplies shall be sized to furnish the total connected load in a worst-case condition plus 25% spare capacity.

13. Voltage drop calculations for wiring runs demonstrating worst-case condition.

B. Layout drawings (plans) identifying all fire detection and alarm system devices. Plans shall be to scale and indicate mounting height for each device. Complete drawings covering the following shall be submitted by the contractor for the proposed system:

1. Floor plans in a CAD compatible format at a scale of 1/8"=1'-0" showing all equipment and raceways, marked for size, conductor count with type and size, showing the percentage of allowable National Electric Code fill used.

2. Provide a fire alarm system function matrix as referenced by NFPA 72, Figure A-7-5.2.2 (9). Matrix shall illustrate alarm input/output events in association with initiation devices. Matrix summary shall include system supervisory and trouble output functions. Include any and all departures, exceptions, variances or substitutions from these specifications and/or drawings at time of bid.

1.10 QUALITY ASSURANCE

A. Fabrication and Installation Personnel Qualifications:
   1. Trained and experienced in the fabrication and installation of the materials and equipment.
   2. Knowledgeable of the design and the reviewed submittals.
   3. NICET Level 2 certified.

B. Manufacturer:
   1. At least 5 years experience with approved systems.
   2. Having authorized service facility within 150 miles of Site.

C. Components: All components shall be UL listed for intended use.

D. Manufacturer's Services:
   1. Manufacturer's Certificate:
      a. Submit for installed system.
      b. Required Assurances:
         1) Confirmation of final inspection.
         2) Installation conforms to Specifications and Manufacturer's requirements.
   2. Provide Owner training program.

1.11 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration or damage, contamination with foreign matter, damage by weather or elements, and in accordance with Manufacturer's directions.

C. Store materials indoors and protect from weather. When necessary to store outdoors, elevate materials above grade and enclose with durable, watertight wrapping.

D. Reject damaged, deteriorated, or contaminated materials and immediately remove from the Site. Replace rejected material with new materials at no additional cost to Owner.

1.12 WARRANTY

A. The Contractor shall warranty all materials, installation and workmanship for 1 year from date of acceptance, unless otherwise specified.
B. A copy of the Manufacturer's warranty shall be provided with close-out documentation and included with the operation and installation manuals.

C. The System Supplier shall maintain a service organization with adequate spare parts stock within 75 miles of the installation.

D. Any defects that render the system inoperative shall be repaired within 24 hours of the owner notifying the contractor.

1.13 CLOSE OUT

A. Close out submittals shall include:
   1. Project specific operating manuals covering the installed fire detection and alarm system.
   2. Manufacturer’s data sheets and installation manuals/instructions for all equipment supplied.
   3. Owner’s instruction and operation manual.
   4. Record drawings consisting of: a scaled plan of each building showing the placement of each individual item of the fire detection and alarm system as well as raceway size and routing, junction boxes, and conductor size, quantity, and color in each raceway.
   5. All drawings must reflect point to point wiring.
   6. All drawings shall be provided in standard .DXF format. A vellum plot of each sheet shall also be provided.
   7. The application program listing for the system as installed at the time of acceptance by the building owner and/or local AHJ (disk, hard copy printout, and all required passwords).
   8. Provide the name, address, and telephone of the authorized factory representative.
   9. A filled out Record of Completion similar to NFPA 72, 1999 edition figure 1-6.2.1.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Provide products manufactured by one of the following Manufacturers:
   1. Siemens Industry, Inc.
   2. Simplex.
   3. National Time and Signal
   4. No alternates will be acceptable.

2.2 CONTROL PANEL

A. The control panel(s) shall be a multi-processor based networked system designed specifically for fire, one-way and two-way emergency audio communications, smoke control.

B. The control panel shall include all required hardware, software and site specific system programming to provide a complete and operational system.

C. The control panel shall include the following circuits:
   1. Class B initiating device circuits.
   2. Class B signaling line circuits.
   3. Class B notification appliance circuits.

D. The control panel(s) operational priority shall assure that life safety takes precedence among the activities coordinated by the control panel.

E. The control panel(s) shall be surface mounted.

F. The control panel(s) shall be black.

G. The control panel shall be capable of mass notification in the future.
H. The control panel shall include the following capacities:
1. Support up to 2,500 analog/addressable points.
2. Support network connections up to 63 other control panels and annunciators.
3. Support multiple digital dialers and modems
4. Support multiple communication ports and protocols
5. Support up to 1,740 chronological events.
6. The control panel shall include the following features:
   a. Ability to download all network applications and firmware from the configuration computer from
      the configuration computer from a single location on the system.
   b. Provide electronic addressing of analog/addressable devices.
   c. Provide an operator interface control/display that shall annunciate, command and control system
      functions.
   d. Provide an internal audible signal with different programmable patters to distinguish between
      alarm, supervisory, trouble and monitor conditions.
   e. Provide a discreet system control switch provided for reset, alarm silence, panel silence, drill
      switch, previous message switch, next message switch, and details switch.
   f. Provide system reports that provide detailed description of the status of system parameters for
      corrective action or for preventative maintenance programs. Reports shall be displayed by the
      operator interface or capable of being printed on a printer.
   g. Provide an authorized operator with the ability to operate or modify system functions like system
      time, date, passwords, holiday dates, restart the system and clear control panel event history
      file.
7. The control panel shall contain a standby power supply that automatically supplies electrical energy to
   the system upon primary power supply failure. The system shall include a charging circuit to
   automatically maintain the electrical charge of the battery.
8. Operator's Interface/Display:
   a. The system shall allow network functions to be configured to apply to any combination of
      (panels) in the network
   b. Each control panel(s) (network node) shall be capable of supporting a printer. All system control
      panel printer ports shall be configurable to output any combination of alarm, supervisory,
      trouble, monitor, or service group event messages.
   c. Each control panel(s) shall be capable of supporting a LCD display. The display on each panel
      shall be configurable to display the status of any and all combinations of all alarm, supervisory,
      trouble, monitor, or service group event messages.
   d. From each LCD display on the system shall be capable of being programmed for control
      functions of any node or the entire network. The LCD display shall reside on the network as a
      node and continue to operate with any fault on the network. An LCD shall be capable of being
      programmed to only be operational when a node is in stand alone mode, with a network fault.
   e. The system program shall have a minimum of 100 system definable service groups definable
      within the program to allow facilitate the testing of installed system based on the physical layout
      of the system. Service groups that disable the wiring of circuits serving multiple floors or fire
      zones shall not be considered as equal.
   f. The operator display shall clearly identify unacknowledged and acknowledged alarm,
      supervisory, trouble, and monitor status messages.
   g. The system shall provide the ability to download data from the analog/addressable detectors to
      a PC while the system is on-line and operational in the protected premises. The downloaded
      data may then be analyzed in a diagnostic program supplied by the system manufacturer.
   h. A standby power supply shall automatically supply electrical energy to the system upon primary
      power supply failure.
9. Annunciation:
   a. The system shall be designed and equipped to receive, monitor, and annunciate signals from
      devices and circuits installed throughout the building.
   b. Standard LED annunciators may be combined in common enclosures provided that the groups
      of LED's comprising each of the required annunciators are separated from one another
      (Detection, Supervisory, Status, and Status) and clearly labeled.
   c. Manufacturers' standard control switches shall be acceptable if they provide the required
      operation, including performance, supervision, and position indication. If the manufacturers'
      standard switches do not comply with these requirements, fabrication of custom manual controls
      acceptable to the Owner is required.
d. Receipt of alarm, trouble, and supervisory signals shall activate integral audible devices at the control panel(s). The integral audible devices shall produce a sound output upon activation of not less than 85 dBA at 10 feet.

e. The annunciator shall contain the following system status indicators:
   1) 168 character backlit Liquid Crystal Display
   2) System Normal Indicator
   3) System Common Alarm Indicator
   4) System Common Trouble Indicator
   5) System Common Supervisory Indicator
   6) System Ground Fault Indicator
   7) System Common Security Indicator
   8) System Disabled Point(s) Indicator
   9) System Reset Switch with Indicator
  10) System Alarm Silence Switch with Indicator
  11) System Trouble Silence Switch with Indicator
  12) System Message Queue Scroll Switches.
  13) 10-Digit Keypad to Enable/Disable System and Functions.

f. The LED annunciator rows shall contain the following format:
   1) Provide one row of red (alarm) and yellow (trouble) LED’s. LED’s in each row shall be arranged in columns, one column per type of alarm initiating device, and shall illuminate upon receipt of an alarm signal from the associated device(s) (i.e., electrical room smoke detector).
   2) Provide one row of red (alarm) LED’s. LED’s in each row shall be arranged in columns, one column per type of alarm initiating device, and shall illuminate upon receipt of an alarm signal from the associated device(s) (i.e., electrical room smoke detector).
   3) Provide one row of yellow (supervisory) LED’s. LED’s in each row shall be arranged in columns, one column per type of supervisory type device, and shall illuminate upon receipt of an supervisory signal from the associated device(s).

  4) The LED annunciator shall be provided with 25% spare LED’s minimum. Each pair of LED’s shall be labeled “Spare”.

10. Power Supply:
   a. System power supply(s) shall provide multiple power limited 24 VDC output circuits as required by the panel.
   b. Upon failure of normal (AC) power, the affected portion(s) of the system shall automatically switch over to secondary power without losing any system functions.
   c. Each system power supply shall be individually supervised. Power supply trouble signals shall identify the specific supply and the nature of the trouble condition.
   d. All standby batteries shall be continuously monitored by the power supply. Low battery and disconnection of battery power supply conditions shall immediately annunciated as battery trouble and identify the specific power supply affected.
   e. All system power supplies shall be capable of recharging their associated batteries, from a fully discharged condition to a capacity sufficient to allow the system to perform consistent with the requirements of this section, in 48 hours maximum.
   f. All AC power connections shall meet the requirements of NFPA 72. The AC power circuit shall be installed in conduit raceway. The power circuit disconnect means shall be clearly labeled FIRE ALARM CIRCUIT CONTROL and shall have a red marking. The location of the circuit disconnect shall be labeled permanently inside the each control panel the disconnect serves. The electrical contractor shall be responsible for providing 120 volt power for all power supplies.

11. Reports:
   a. The system shall provide the operator with system reports that give detailed description of the status of system parameters for corrective action, or for preventative maintenance programs.
   b. The system shall provide these reports via the main LCD, and shall be capable of being printed on any system printer.
   c. The system shall provide a report that gives a sensitivity listing of all detectors that have less than 75% environmental compensation remaining. The system shall provide a report that provides a sensitivity (% Obscuration per foot) listing of any particular detector.
   d. The system shall provide a report that gives a listing of the sensitivity of all of the detectors on any given panel in the system, or any given analog/addressable device loop within any given panel.
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2.3 INITIATING DEVICES

A. Analog Addressable Smoke Detectors – General:
1. Each Analog addressable smoke detector’s sensitivity shall be capable of being programmed individually as most sensitive, more sensitive, normal, less sensitive, or least sensitive.
2. In addition to the five sensitivity levels the detector shall provide a prealarm sensitivity setting, which shall be settable in 5% increments of the detector’s alarm sensitivity value.
3. The detector shall provide a maintenance alert signal that 75% to 99% compensation has been used.
4. The detector shall provide a dirty fault signal that 100% greater compensation has been used.
5. The system shall allow for changing of detector types for service replacement purposes without the need to reprogram the system.

B. Smoke Detectors:
1. Smoke detectors shall be photometric type, with visible LED alarm light.
2. Separate mounting base and detachable sensor head.

C. Duct Detector Housing:
1. Provide smoke detector duct housing assemblies with air sampling tube sized for duct location to mount an analog addressable detector.
2. Mounting base with auxiliary relay.
3. Provide remote alarm LED indicators and remote test station for each duct type smoke detector.
4. Wired and installed by Electrical Subcontractor. Coordinate exact location with Mechanical Subcontractor.

D. Heat Detectors:
1. Analog/Addressable Combination, Fixed Temperature/Rate of Rise:
   a. Fixed Temperature: 135 degrees F (57 degrees C).
   b. Rate of Rise: 15 degrees F (9 degrees C) per minute.
   c. Analog/Addressable Fixed Temperature: 200 degrees F (94 degrees C).
   d. Heat detector spacing shall comply with NFPA and Manufacturer’s listing.

E. Detector Bases: Provide standard detector mounting bases suitable for mounted on 1-gang, 3-1/2-inch or 4-inch octagon box, and 4-inch square box.

F. Manual Pull Stations:
1. Shall be analog/addressable, double action, single stage, recessed pull-lever, break glass, open circuit type. Finish of the station to be red with lettered instructions “PULL IN CASE OF FIRE.”
2. Provide Stopper II Model STI-1000 with battery horn pull station guard as manufactured by Safety Technology International, Inc., P.O. Box 621, Waterford, MI 48095, at each pull station:

G. Addressable Relays/Monitor And Control Modules: Form C normally open/normally closed dry relay contacts rated at 24VDC at 2 amps.

2.4 NOTIFICATION APPLIANCES

A. Low Profile Horn Strobes/Low Profile Strobes:
1. Provide wall mounted horn/strobe with audible output of 84dBA at 10 feet.
2. Horn shall have a selectable steady or synchronized temporal output and shall be wired separately from strobes.
3. Strobes shall provide synchronized flash outputs.
4. Wall mounted strobe Candela ratings of 15cd, 30cd, 60cd, 75cd, 110cd. Candela ratings shall be determined by equipment supplier.
5. Ceiling mounted strobe Candela ratings of 15cd, 30cd, 75cd, 90cd, 115cd, 150cd, and 177cd Candela ratings shall be determined by equipment supplier.

B. Low Profile Speaker Strobes/Low Profile Strobes:
1. Provide wall mounted speaker/strobe with audible output of up to 96 dBA from 10 feet.
2. Speakers shall be wired separately from strobes.
3. Strobes shall provide synchronized flash outputs.
4. Wall mounted strobe Candela ratings of 15cd, 30cd, 60cd, 75cd, 110cd. Candela ratings shall be determined by equipment supplier.
5. Ceiling mounted strobe Candela ratings of 15cd, 30cd, 75cd, 90cd, 115cd, 150cd, and 177cd Candela ratings shall be determined by equipment supplier.

PART 3 - EXECUTION

3.1 WIRING
A. All wiring shall be in accordance with Manufacturer’s written recommendations and shall meet all applicable code requirements.
B. All wiring shall be copper.
C. No. 16 AWG minimum for signaling line circuits (SLCs)
D. No. 14 AWG THHN minimum for audible and visual notification appliance circuits (NACs).
E. No. 12 AWG THHN minimum for line voltage.
F. Install wiring partially in metal raceways in accordance with Division 26 “Raceways for Electrical Systems.” Provide junction boxes and conduit sleeves to main corridor areas. Install wiring in conduit sleeves to above ceiling in corridor areas. Wiring in corridor areas does not need to be installed in conduit. Provide cable tray, cable supports, nylon straps as required to properly support cabling in accordance with code.
G. Cable type shall be FPLP, FPLR.

3.2 EQUIPMENT INSTALLATION
A. Duct Smoke Detectors: Connect each duct detector to fire alarm system so upon sensing smoke, fire alarm system goes into alarm. Coordinate location with Mechanical Subcontractor.
B. Heat Detectors: Install at Manufacturer’s listed spacing as determined by ceiling height in protected rooms.
C. Smoke Detectors: Install detectors indicated to be ceiling mounted not less than 4 inches from a side wall to the near edge. Install detectors located on the wall at least 4 inches but not more than 12 inches below the ceiling. For exposed solid joist construction, mount detectors on the bottom of the joists. On smooth ceilings, install detectors not over 30 feet apart in any direction. Install detectors no closer than 5 feet from air registers.
D. Audio/Visual Alarm Indicating Devices: Mount at 80 inches above the highest floor level within space or 6 inches below the ceiling, whichever is lower. Unless otherwise indicated, install bells and horns on flush-mounted back boxes with the device operating mechanism concealed behind a grille. Combine audible and visible alarms at the same location into a single unit.
E. Fire Alarm Panel (FAP): Top of cabinet not more than 6 feet above the finished floor.
F. Provide a heat detector and shunt trip breaker within elevator machine rooms for hoist machine power. Heat detector will transmit a signal to the elevator controller which will then send the cab to “capture floor”. Once at the capture floor, the elevator controller will send a signal to open the shunt trip breaker and shut interrupt elevator controller power completely. Cab lighting to remain on. Final connections to elevator controller by Elevator Contractor.

3.3 GROUNDING

A. Ground equipment and conductor and cable shields. For audio circuits, minimize to the greatest extent possible ground loops, common mode returns, noise pickup, cross talk, and other impairments. Provide 5 ohm ground at main equipment location. Measure, record, and report ground resistance.

3.4 FIELD QUALITY CONTROL

A. All fire alarm equipment and components that are removed during demolition shall be collected, stored and delivered to a location on the campus as directed by the owner.

B. All intelligent analog addressable devices shall be tested for current address, sensitivity, and user defined message.

C. All wiring shall be tested for continuity, shorts, and grounds before the system is activated.

D. All test equipment, instruments, tools, and labor required to conduct the tests shall be made available by the installing contractor.

E. The system including all its sequence of operations shall be demonstrated to the Owner, his representative, and the local fire inspector. In the event the system does not operate properly, the test shall be terminated. Corrections shall be made and the testing procedure shall be repeated until it is acceptable to the Owner, his representatives and the fire inspector.

F. At the final test and inspection, a factory trained representative of the system manufacturer shall demonstrate that the system functions properly in accordance with these specifications. The representative shall provide technical supervision, and participate during all of the testing for the system.

G. All fire alarm testing shall be in accordance with National Fire Alarm Code, NFPA 72 - 1999, Chapter 7.

H. A letter from the Contractor attesting to the full compliance with construction documents and current codes and standards. The letter shall certify that the system is installed entirely in accordance with the system manufacturer’s recommendations and within the limitations of the required listings and approvals, that all system hardware and software has been visually inspected and functionally tested by a manufacturer’s certified representative, and that the system is in proper working order.

I. Maintain the existing fire alarm system until the new system is completely functional.

J. Upon acceptance of the new fire alarm system, provide complete demolition of the existing system, including all wall repairs, ceiling repairs, cover plates, cutting, patching, painting, etc.

END OF SECTION 28 31 00