

PROJECT MANUAL

INCLUDING SPECIFICATIONS

FOR

**A NEW ADDITION FOR THE MIAMI COUNTY
SHERIFF TACTICAL VEHICLE STORAGE FACILITY**

**2050 N. County Rd 25A
Troy, Ohio 45373**

for

Board of Miami County Commissioners

**201 W. Main Street
Troy, Ohio 45373**

PREPARED BY:



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NOT APPLICABLE

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NOTICE TO BIDDERS

Sealed Bid proposals will be received by Board of Miami County Commissioners in the Commissioner's Office at 201 W Main St, Troy, OH 45373 until 1:35.00 PM on Thursday, May 16, 2024, at which time and place proposals will be opened publicly and read aloud. Proposals received after 1:35.00 PM on May 16, 2024 will be returned unopened. Proposals shall be for the furnishing of materials and the performance of labor necessary for the Project and submissions should be marked as follows:

A New Addition for the Miami County Sheriff Tactical Vehicle Storage Facility
2050 North County Road 25A
Troy, Ohio, 45373

All in accordance with the Contract Documents prepared by WDC Group, Springfield, Ohio

Lump Sum bids for the following Prime Bid Packages will be received: 1A – General Work & Labor, 15B – Mechanical, and 16A - Electrical.

A prebid meeting will be held at 11:30 AM on Monday, April 22, 2024 at the Sheriff Patrol Training Center at 2100 N. County Road 25A, Troy, Ohio 45373. The pre-bid meeting is not mandatory, but bidders are strongly encouraged to attend.

A Bid Security in the form of a certified check, cashier's check, irrevocable letter of credit, or surety company bond pursuant to Chapter 1305 of the Ohio Revised code in the amount of 10% of the total bid shall accompany each bid; or a bid guaranty bond in accordance with Chapter 153.571 of the Ohio Revised Code in the amount of 100% of the total bid shall accompany each bid.

Successful Bidders shall conform to the State of Ohio Prevailing wages for this project.

Plans and specifications will be available to download from a DropBox site. Email your request to cavec@wdc-group.com and a link will be sent with downloading instructions. Plans will also be on file at: the McGraw Hill-Dodge Plan Room and the Builders Exchange.

Each bid must be submitted in duplicate on a blank form furnished by the Architect, in a sealed envelope. Mark plainly on the outside of the envelope, the project you are bidding on. No bidder may withdraw their bid for a period of sixty (60) days after the bid opening

The Owner reserves the right to reject any or all bids and to waive informalities, irregularities and/or errors in the bids to the extent permitted by law. This includes the right to extend the date and time for receipt of bids.

This notice is posted on the Board of Miami County Commissioners website.

Notice can be accessed at: www.miamicountyohio.gov.

The Date of this notice: _____, 2023

By: Board of Miami County Commissioners
A New Addition for the Miami County Sheriff Tactical Vehicle Storage Facility
201 W Main Street
Troy, Ohio 45373

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SECTION 00101 - INVITATION TO BID

Board of Commissioners of Miami County, Ohio
201 West Main Street
Troy, Ohio 45373

INVITATION TO BID ON THE CONSTRUCTION OF THE FOLLOWING PROJECT:

A NEW ADDITION FOR THE MIAMI COUNTY SHERIFF TACTICAL VEHICLE STORAGE FACILITY

2050 N. County Rd 25A
Troy, Ohio 45373

THE OWNER RESERVES THE RIGHT TO WAIVE ANY IRREGULARITIES AND/OR INFORMALITIES AND TO REJECT ANY/OR ALL BIDS.

Sealed proposals will be received at:

Board of Miami County Commissioners
201 West Main Street
Troy, Ohio 45373

until: **1:35 pm local time on Thursday, May 16, 2024** at which time the Proposals will be publicly opened and read for labor and material necessary for the construction of the above designated project according to the Construction Documents prepared by:

WDC Group
23 South Center Street
Springfield, Ohio 45502
(937) 325-9991

PRE-BID CONFERENCE

A Pre-Bid Conference for all interested contractors will be held at the Sheriff Patrol Training Center at 2100 N. County Road 25A, Troy, Ohio 45373 on **Monday, April 22, 2024 at 11:30 AM LOCAL TIME**. The pre-bid is not mandatory, but bidders are strongly encouraged to attend. Electronic copies of the contract documents will be available via Dropbox the morning of the Pre-Bid to contractors that request access and provide requested contact information via email (cavec@wdc-group.com).

The following general description of the work is intended to be an aid to the prospective bidder and is not intended to comprise a complete description of all work required.

WORK DESCRIPTION

The Work consists of the necessary demolition of existing building, site work including rough & final grading, asphalt paving patching, concrete foundation and slab, construction of a 2,000 square foot post frame addition to an existing storage building, install overhead door and metal siding and roof. Mechanical and electrical systems are included.

Base Bid Work is outlined in the Project Manual and the Drawings. Proposals will be received on a **Lump Sum Prime Contract basis for all portions of the Work**. EACH PRIME CONTRACTOR IS HEREBY CAUTIONED TO BE AWARE THAT SOME ADDITIONAL RESPONSIBILITIES MAY BE INCLUDED IN YOUR WORK THAT IS NORMALLY PROVIDED BY A GENERAL CONTRACTOR, SUCH AS LAYOUT WORK, DIMENSION VERIFICATION, COORDINATION OF WORK INCLUDED IN DIVISION 0 OF THE GENERAL CONDITIONS AND DIVISION 1 GENERAL REQUIREMENTS. THESE SPECIFICATION SECTIONS SHALL BE INCLUDED IN THE RESPONSIBILITIES OF EACH PRIME CONTRACTOR SEE TABLE OF CONTENTS FOR ITEMS AND SPECIFICATION SECTIONS INCLUDED IN DIVISION 0, 1, AND UNDER EACH CONTRACT. Bids will be accepted for the following Prime Contracts:

SPECIFICATION SECTIONS BY PRIME CONTRACT:

#1A	GENERAL WORK & LABOR	DIV. 0 - CONDITIONS OF THE CONTRACT DIV. 1 - GENERAL REQUIREMENTS 02060 Building Demolition 02226 Excavation and Backfilling 02300 Earthwork 02511 Hot-Mixed Asphalt Paving 02900 Landscaping 03300 Cast-in-Place Concrete 05500 Miscellaneous Metals 06100 Rough Carpentry 07200 Insulation 07270 Weather Barriers 07600 Flashing and Sheet Metal 07900 Sealants 08110 Hollow Metal Doors and Frames 08360 Sectional Overhead Doors 08710 Door Hardware 09910 Painting 10520 Fire Extinguishers and Cabinets 13554 Pre-Engineered Wood Frame Building
#15B	MECHANICAL	DIV. 0 - CONDITIONS OF THE CONTRACT DIV. 1 - GENERAL REQUIREMENTS 15050 Basic Mechanical Materials and Methods 15080 HVAC Insulation 15145 Supports and Anchors 15190 Fuel Gas Piping 15623 Forced Air Furnaces 15625 Tube Heaters 15800 Air Distribution 15870 Power Ventilators 15890 Ductwork 15950 Testing, Adjusting, and Balancing
#16A	ELECTRICAL	DIV. 0 - CONDITIONS OF THE CONTRACT DIV. 1 - GENERAL REQUIREMENTS 16000 Electrical General Provisions 16060 Wired Ground System 16080 Tests, Adjustments, and Inspections 16111 Conduit 16120 Wire and Cable, 600 Volts and Below 16123 Building Wire and Cable 16130 Boxes 16140 Wiring Devices 16170 Grounding and Bonding 16195 Electrical Identification 16321 Equipment Rough-In and Hook-Up 16338 Contactors 16440 Panel Boards 16450 Secondary Grounding 16476 Enclosed Circuit Breakers 16500 Lighting 16902 Electrical Controls and Relay

Combination bids should list the prime contract nomenclature used in the specifications and contract documents.

THE OWNER RESERVES THE RIGHT TO WAIVE ANY IRREGULARITIES AND/OR INFORMALITIES AND TO REJECT ANY OR ALL BIDS.

A Bid Security in the form of a certified check, cashier's check, irrevocable letter of credit, or surety company bond pursuant to Chapter 1305 of the Ohio Revised code in the amount of 10% of the total bid shall accompany each bid; or a bid guaranty bond in accordance with Chapter 153.571 of the Ohio Revised Code in the amount of 100% of the total bid shall accompany each bid.

No bid shall be considered unless made on the forms available at the office of the project Architect and in accordance with the Contract Documents which consist of all advertisements, instructions to bidders, specifications and drawings, bid form of contract agreement, bid and performance bond, schedule of wage rates, and all addenda thereto, all of which are available upon request.

Should any bid be rejected, the Bid Bond will be returned forthwith to the bidder, and, should any bid be accepted, the Bid Bond will be returned upon proper execution of a contract agreement.

No bid may be withdrawn for a period of sixty (60) days minimum after the scheduled closing time for the receipt of the bids.

The attention of bidders is called to statutory requirements of the State of Ohio relating to the licensing of corporations organized under the laws of any other state; and signing of a Non-collusion Affidavit and Personal Property Statement and their return with the bid. Bids are to be clearly marked on the outside of the envelope in the lower left-hand corner as follows: **"A NEW ADDITION FOR THE MIAMI COUNTY SHERIFF TACTICAL VEHICLE STORAGE FACILITY"**.

The **OWNER** intends to accept the lowest and most responsible bids (bidders) Per the Ohio Revised Code for the project, and reserves the right to reject any and all or parts of any and all bids and to waive informalities or irregularities that do not affect the substance of the specifications.

CONSTRUCTION SCHEDULE

Construction will commence per schedule in Specification Section 00300.

COST TO THE OWNER FOR WORK NOT COMPLETED BY THE SCHEDULED COMPLETION DATE (LIQUIDATED DAMAGES)

The Owner shall be reimbursed by the Contractor for the costs to the Owner due to delay in completion of his work by the scheduled Completion Dates for each work item listed in the schedule included in Section 00300 at the following rates: \$500.00 per calendar day.

CONSTRUCTION DOCUMENTS

Electronic copies of the contract documents will be available via Dropbox the morning of the Pre-Bid to contractors that request access and provide requested contact information via email (cavec@wdc-group.com). Plans will also be on file at the McGraw Hill-Dodge Plan Room and the Builders Exchange.

Questions during the bidding period should be directed to Christina Cave (cavec@wdc-group.com), at WDC Group, LLC.

END OF SECTION 00101

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SECTION 00200 – INSTRUCTION TO BIDDERS

PART I - Instruction to Bidders

- A. Attached herein is “AIA Document A701 – Instruction to Bidders” and Contractors are to follow accordingly.



AIA® Document A701® – 2018

Instructions to Bidders

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

A New Addition for the Miami County Sheriff Tactical Vehicle Storage Facility
2050 North County Road 25A, Troy, Ohio 45373

THE OWNER:
(Name, legal status, address, and other information)

Board of Miami County Commissioners
201 W Main Street
Troy, Ohio 45373

THE ARCHITECT:
(Name, legal status, address, and other information)

WDC Group LLC
23 South Center Street
Springfield, Ohio 45502
Telephone Number: 937.325.9991

TABLE OF ARTICLES

- 1 **DEFINITIONS**
- 2 **BIDDER’S REPRESENTATIONS**
- 3 **BIDDING DOCUMENTS**
- 4 **BIDDING PROCEDURES**
- 5 **CONSIDERATION OF BIDS**
- 6 **POST-BID INFORMATION**
- 7 **PERFORMANCE BOND AND PAYMENT BOND**
- 8 **ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS**

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner’s Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

As per Project Manual and Specifications

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

As per Project Manual and Specifications

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

As per Project Manual and Specifications

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

As per Project Manual and Specifications

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

As per Project Manual and Specifications

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

As per Project Manual and Specifications

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.

(Insert the complete AIA Document number, including year, and Document title.)

AIA Document A105-2017

- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.

(Insert the complete AIA Document number, including year, and Document title.)

- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.

(Insert the complete AIA Document number, including year, and Document title.)

AIA Document A105-2017

- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203-2013.)

- .5 Drawings

Number **Title** **Date**
As per Section 00700 – Exhibit A

.6 Specifications

Section **Title** **Date** **Pages**
As per Section 00700 – Exhibit B

.7 Addenda:

Number **Date** **Pages**
TBD

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

The Sustainability Plan:

Title **Date** **Pages**

Supplementary and other Conditions of the Contract:

Document **Title** **Date** **Pages**
As per Project Manual and Specifications

.9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Christina Cave, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 11:36:31 ET on 04/11/2024 under Order No. 2114434408 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ – 2018, Instructions to Bidders, other than changes shown in the attached final document by underscoring added text and striking over deleted text.

Christina Cave

(Signed)

Project Contract Administrator

(Title)

April 11, 2024

(Dated)

SECTION 00210 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

GENERAL

These Supplementary Instructions to Bidders modify, change, delete from or add to the "Instructions to Bidders", AIA document A701- 2018. Where any Article of the Instructions to Bidders is modified or any paragraph, sub-paragraph or clause thereof is modified or deleted by these Supplementary Instructions, the unaltered provisions shall remain in effect.

The supplementary Instructions to Bidders shall be read with, and as complementary with, the Instructions to Bidders and in the event of conflict, the Supplementary Instructions to Bidders shall govern.

The Articles of these Supplementary Instructions use Articles, Numbers and Titles which relate to the Instructions to Bidders. As an example, 1.2.3.4 refers to and Article (1), paragraph (2), subparagraph (3), and supplementary clause (4) of the Instructions to Bidders.

ARTICLE 2 - BIDDERS REPRESENTATIONS

2.1.2 Bidder's responsibility and understanding shall not be limited to paragraphs of specification sections or drawings listed as pertaining to the trade or Contract of a particular Bidder. All Bidders shall examine the documents pertaining to the work of other Contracts and trades, as his responsibility for certain work may be established therein.

2.1.3 Bidder's site visit and familiarization shall include, but not be limited to, investigation of adjacent job site areas; means of approach to the site; relationship of the job site to other properties; facilities for delivery, storage, placing and handling of materials and equipment; other work, if any, being performed; other work in place; and other obstacle, condition or relevant matter concerning the work to be performed.

2.1.4 The successful Bidder will not be allowed any extra compensation by reason of any matter or thing concerning which the Bidder might have informed himself prior to submitting his Bid.

ARTICLE 3 - BIDDING DOCUMENTS

3.1.6 EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

3.1.6.1 Subsurface and Physical Conditions:

3.1.5.1.1 The Project Manual identify:

- 3.1.6.1.1.1 Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that the project Engineer has used in preparing the Bidding Documents.
- 3.1.6.1.1.2 Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that the project Engineer has used in preparing the Bidding Documents.

3.1.6.1.2 Copies of reports and drawings referenced will be made available by the Owner to any Bidder on request. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, in such drawings or reports. Costs associated with making available copies of reports and drawings shall be borne by Bidder.

3.1.6.2 Underground Facilities:

3.1.6.2.1 Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and the project Engineer by owners of such Underground Facilities, including Owner, or others.

3.1.6.3 Hazardous Environmental Condition:

3.1.6.3.1 The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.

3.1.6.3.2 Copies of reports and drawings referenced will be made available by Owner to any Bidder on request. Bidder is

responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, in such drawings. Costs associated with making available copies of reports and drawings shall be borne by Bidder.

- 3.1.6.4 On request, Owner will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.
- 3.1.6.5 Reference is made to the Drawings and Specifications for identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder, for examination, access to or copies of contract documents (other than portions thereof related to price) for such work.
- 3.1.6.6 It is responsibility of each Bidder before submitting a Bid to:
 - 3.1.6.6.1 Examine and carefully study the Bidding Documents, other related data identified in the Bidding Documents, and any Addenda.
 - 3.1.6.6.1.1 Bidding Documents, especially the Standard Conditions and the Supplementary conditions for special provisions of the Contract Documents.
 - 3.1.6.6.2 Visit the Site to become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - 3.1.6.6.3 Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
 - 3.1.6.6.4 Carefully study all:
 - 3.1.6.6.4.1 Reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions.
 - 3.1.6.6.4.2 Reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.
 - 3.1.6.6.5 Obtain and carefully study (or accept consequences of not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.
 - 3.1.6.6.6 Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) Bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
 - 3.1.6.6.7 Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - 3.1.6.6.8 Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
 - 3.1.6.6.9 Promptly give Architect written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder

discovers in the Bidding Documents and confirm that the written resolution thereof by Architect is acceptable to the Bidder.

3.1.6.7.10 Determine Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of the Work.

3.1.6.8 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of these Bid/Contract; that without exception the Bid is premised upon performing and furnishing the Work, required by Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by Bidding Documents; that bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in Bidding Documents and the written resolutions thereof by Engineer are discovered in Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder; and that Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing the Work.

3.1.6.8.1 Addenda do not always rule in a conflict of drawings, specifications, and addenda. The most stringent requirement rules, UNLESS THE ADDENDUM SAYS SPECIFICALLY TO DELETE A REQUIREMENT.

3.2.1.1 Bidders and Sub-bidders shall promptly notify the Architect of any apparent inconsistency or conflict between the requirements of the Drawings and Specifications and the requirements and requirement to provide specified material by specified manufacturers.

3.2.2.1 Bidder's failure to request clarifications shall not relieve the successful Contractor of his responsibilities to perform the work in compliance with the intent of the Contract Documents as interpreted by the Architect. The execution of the Agreement shall be considered an implicit indication that the Contractor has a thorough comprehension of the full intent and scope of the Contract Documents.

3.3.1.1 Reference to materials or systems herein by name, make, or catalog number is intended to establish a standard of quality and not to limit competition; the words "or Architect approved equivalent" are implied following each brand name. However all substitutions must be approved prior to submission of bids, except as provided in paragraph 3.3.7 (below).

3.3.6 Requests for substitution when forwarded by the Contractor to the Architect, are understood to mean that the Contractor:

- .1 Represents that he has personally investigated the proposed substitute product and determined that it is equivalent or superior in all respects to that specified;
- .2 will provide the same guarantee for the substitution that he would for that specified;
- .3 certified that cost data presented is complete and includes related costs under this Contract, but excludes costs under separate contracts and the Consultant's redesign costs, and that he waives all claims for additional costs related to the substitution which subsequently become apparent;
- .4 will bear all additional costs incurred by any party as a result of this substitution;
- .5 will bear all costs, through the Owner, incurred by the Architect for any additional design, engineering, coordination or inspection services required to implement the substitution; and
- .6 will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.

3.3.7 Substitutions will not be considered if for their implementation they require substantial revision of the Contract Documents in order to accommodate their use, unless the Contractor agrees to bear the cost of such revisions.

3.3.8 After receipt of bids, no substitution of material, equipment or technique will be considered unless substantiated by one of the following conditions:

- .1 Required for compliance with subsequent interpretation of the code requirements or insurance regulation.
- .2 Impossibility of supplying in conformance with the Contract Documents, through no fault of the Contractor.
- .3 Where the substitution would clearly serve the Owner's best interests, in terms of cost, time, value or other considerations.

3.3.9 Substitution requests made after receipt of bids shall be timely, in writing, and accompanied by adequate data.

Acceptable changes shall be incorporated into the Contract Documents by Change Order, or other written order.

ARTICLE 4 - BIDDING PROCEDURES

- 4.1.1.1 Submit one (1) copy only of all forms and documents required to be submitted at the time of bid.
- 4.1.2.1 Bidders shall indicate "NO BID" or "NA" in all blanks of the Bid Form not used, so that all spaces are completed.
- 4.1.4.1 Amendments to the Bid Form, or inclusion of correspondence, or details, or written or printed matter, or any appendage other than as specifically called for may disqualify the Bid.
- 4.4.1.1 If the bidder who submits the accepted bid wishes to withdraw his bid from consideration, the request to do so must be in writing and filed with the **Owner** within two business days after the conclusion of the bid opening procedure. Otherwise, bids may not be modified or canceled for a period of sixty (60) calendar days following the bid date. It is further required that any bidder making a request to withdraw his bid shall and must comply with all of the applicable and pertinent provisions of the Ohio Revised Code Section 9.31.

4.5 The Owner is exempt from the payment of Federal Excise Taxes and State of Ohio Sales and Use Taxes.

4.6 BIDDER'S ACKNOWLEDGEMENTS

4.6.1 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that bidder may agree to in writing upon request of Owner.

4.7

BIDDER'S REPRESENTATIONS

4.7.1

In submitting this Bid, Bidder represents that:

- 4.7.1.1 Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- 4.7.1.2 Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- 4.7.1.3 Bidder has carefully studied all: i) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in paragraph 4.02 of the Supplementary Conditions; and ii) reports and drawings of Hazardous Environmental Conditions that have been identified in Paragraph 4.06 of the Supplementary Conditions.
- 4.7.1.4 Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- 4.7.1.5 Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) Bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- 4.7.1.6 Bidder is aware of the general nature of work to be performed by Owner and others at the site that relates to the Work as indicated in the Bidding Documents.
- 4.7.1.7 Bidder has correlated the information known to bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations,

explorations, tests, studies, and data with the Bidding Documents.

4.7.1.8 Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

4.7.1.9 The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of the Work for which this Bid is submitted.

4.7.1.10 Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 5 - CONSIDERATION OF BIDS

5.3.1 Change the first sentence to, "It is the intent of the Owner to award a Contract to the lowest responsible Bidder...". In making such determination, the owner shall utilize the criteria established by Article 9 - BID EVALUATION PROCEDURE of this Section 00210.

5.3.3 Bidders acknowledge by signature on the Form of Proposal their acceptance of the Owner's rights to interpret any bid form, bid proposed, and the Owner's power and authority given by the ORC to determine the lowest responsible bid and the decision of the Owner in the award of the contract and waive appeal of the decision.

ARTICLE 6 - POST-BID INFORMATION

6.3.1 Add to the first sentence after the phrase "award of a Contract" the following: "and prior to the start of any work".

ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

7.2.2.1 The Bid Guaranty and Contract Bond shall be written on the form provided in the Form of Proposal.

ARTICLE 8 - FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

8.1.1.1 If the successful Bidder fails to enter into the Contract the next lowest responsible Bidder, as determined by the Owner, shall be awarded the Contract, or the remaining bids may be considered as described in the Bid Documents.

ARTICLE 9 - BID EVALUATION PROCEDURE

9.1.1 The term "responsible" is not limited to financial soundness, but pertains to many other characteristics of the bidder, such as his general ability and capacity to carry on the work, his promptness, the quality of the work previously done by him, his suitability to the particular task, and other qualities which are found necessary to consider in order to determine whether the contract could be properly performed by the bidder. The ability to provide adequate security is not, of itself, conclusive evidence of responsibility. The Owner may look beyond matters relating to financial responsibility to consider such personal qualities as competence, integrity, and judgment. When evidence shows that (the) low bidder was in bankruptcy and had previously defaulted on the performance of a contract, or that the low bidder had performed poorly on another project, there is no abuse of discretion by Owner in finding that Contractor not a responsible bidder.

9.1.2 The Contractor agrees by submitting a bid or executing a contract that if the Owner so agrees it may use the following state agency requirements for defining "responsibility:" (1) the experience of the bidder; (2) the financial condition of the bidder; (3) the bidder's conduct and performance on previous contracts; (4) the bidder's facilities; (5) the bidder's management skills; (6) the bidder's ability to execute the contract properly. The previous shall also pertain to contracts held as part of a combination bid.

9.1.3 The decision of the Owner with regard to the responsibility of a bidder may be reviewed by a court of law, but the decision will not be disturbed absent fraud, bad faith, or an abuse of discretion on the part of the board shown by clear and convincing evidence.

9.1.4 The Owner may or may not afford the rejected low bidder notice and/or an opportunity to be heard before the Owner at some time prior to the final rejection of his bid.

- 9.1.5 The Owner has the sole discretion to review and evaluate evidence relating to the bidder's responsibility, and to make a determination in such regard.
- 9.2.1 The Contract will be awarded to the lowest responsible Bidder as determined at the discretion of the Owner. The following procedures will be followed by the Owner to determine lowest and most responsible.
- 9.2.1.1 In determining which Bidder is the lowest, the Owner shall consider the Base Bid and any Alternate or Alternates or combinations provided which the Owner determines to accept.
- 9.2.1.2 The total of the accepted Alternate(s) will be added to the Base Bid for the purpose of determining the lowest Bidder.
- 9.2.1.3 If two Bidders submit the same bid amount and both are determined to be responsive and responsible, the Owner reserves the right to select one Bidder by flip of a coin, which shall be conducted in the presence of both Bidders and shall be final.
- 9.2.2 A Bidder for a Contract shall be considered responsive if the Bidders bid responds to the Contract Documents in all respects and contains no material differences or irregularities or deviations from the Contract Documents which would affect the amount of the bid or otherwise give the Bidder a competitive advantage.
- 9.2.2.1 In accordance with ORC, the bid shall be rejected as non-responsive if the Bond is executed by a Surety not licensed in Ohio.
- 9.2.2.3 If the lowest Bidder is not the most responsible, such Bidder shall be notified according to paragraph 9.1.4.
- 9.2.3 In determining whether a Bidder is the most responsible, factors to be considered include, but are not limited to:
- 9.2.3.1 The experience of the Bidder on similar projects with this Owner, or this Architect, or other similar projects;
- 9.2.3.2 The Bidder's capacity to perform the work in a timely manner, promptness, integrity, and suitability for the work;
- 9.2.3.3 The financial condition of the Bidder;
- 9.2.3.4 The conduct and performance of the Bidder on previous contracts, which shall include but not limited to, without limitation, compliance with the MBE participation requirements, Equal Employment Opportunity in the Construction Industry Administrative Rules and prevailing wage laws, and OSHA Requirements.
- 9.2.35 The facilities and equipment of the Bidder necessary to complete the work;
- 9.2.3.6 The management skills of the Bidder;
- 9.2.3.7 The ability of the Bidder to execute the Contract properly;
- 9.2.3.8 The evaluation of a bid below the median of other bids pursuant to paragraph 9.2.1;
- 9.2.3.9 A Bidder who submits a bid for Work as a Mechanical Contractor, i.e., for electrical, plumbing, heating and ventilating, or air conditioning, refrigeration, and fire protection may be required to submit evidence of one of the following:
1. A valid Contractor's license from an OBC certified county, municipal or health department that required a test to obtain such license;
 2. Certification by the Ohio Construction Industry Examining Board; or
 3. Registration of certification by an OBC municipality or county for the preceding consecutive five (5) years, pursuant to demonstration of proof of bonding and insurance.
- 9.2.3.10 Evaluation of the same criteria as listed above for other contractors listed on the bid form or attachments thereto, including but not limited to contractors proposed to be used as part of a combination bid.
- 9.2.4 The Owner shall obtain from the lowest Bidder any information the Owner deems appropriate to the consideration of factors showing responsibility. If the lowest Bidder is most responsible, the Contract shall be awarded to such Bidder unless all bids are rejected.
- 9.2.5 If the lowest Bidder is not the most responsible, and all bids are not rejected, the Owner shall follow the procedure set forth in paragraph 9.2.1 with each next lowest Bidder until the Contract is awarded, all bids are rejected or all Bidders are determined to be not responsible.

ARTICLE 10 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 10.1 The Bidder is required to identify Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, apparent Successful Bidder, and any other

Bidder so requested, shall with the Bid a list of all such Subcontractors, Suppliers, individuals or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner.

10.2 If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute without an increase in Bid.

10.3 If apparent Successful Bidder declines to make any such substitutions Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in General Conditions Paragraph 6.06.B.

10.4 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

END OF SECTION 00210

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00300 - CONSTRUCTION SCHEDULE

PART I- GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

C. TIME FOR COMPLETION

1. Several special efforts are being made to give the Contractors as much time as possible within the time frame available. Overlapping of work by various trades will be carefully monitored. The Architect and Owner will make every effort to expedite the project through prompt review of shop drawings, early decisions regarding construction questions, and any other assistance that can be offered the Contractors during the construction process.

D. PROJECT CONSTRUCTION

1. SCHEDULE

- a. A Project Construction Schedule is shown in the construction drawings, which indicates the time allowed for each Work. Some minor adjustments in start times might be possible for the various portions of the work; however, in no case can there be any extension of the scheduled milestone completion dates as indicated by the week by week schedule for the various portions of the work.
2. Each contractor will be required by contract to commit the necessary forces to meet the Construction Schedule, including adequate number of workmen on the job and administrative personnel, to assure timely delivery of materials and equipment. If during the course of the construction period a contractor demonstrates his inability meet the Project Construction Schedule, and the Owner reserves the right to terminate the contract and, secure another contractor that can meet the Project Construction Schedule, with all associated costs incurred to do so being the responsibility of the original contractor.

E. BIDDERS TIME AND PERSONNEL

1. Each Bidder shall include in his bid proposal adequate provisions for time and personnel to meet the Project Construction Schedule, which could include overtime or weekend work, if necessary.

F. MATERIAL AND EQUIPMENT DELIVERY

1. Upon request, the Contractor shall provide, within 24 hours to the Architect, purchase orders and other documentation to verify order and delivery times of materials.
2. If the delivery time for any material and/or equipment called for on the drawings or specified herein, is anticipated by a bidder to be a problem in regard to meeting the Project Construction Schedule, such bidder is asked to contact the Architect immediately so a change if required, can be made to maintain Schedule.

G. SHOP DRAWINGS

1. Each Contractor shall submit all required Shop Drawings within 10 days after award of contract in order to expedite the work as much as can be done. Thereafter liquidated damages will be assessed.

PART II - PRODUCTS (not applicable)

PART III- EXECUTION (not applicable)

This form shall be included with the Bid envelope or an appropriate substitute listing information required in the ORC.

B. BID GUARANTY AND CONTRACT BOND (Section 153.571 Ohio Revised Code)

KNOW ALL MEN THESE PRESENTS, that we, the undersigned

(Name and Address)
as Principal and _____

(Name of Surety)
as Surety, are hereby held and firmly bound unto the _____, (Owner) hereinafter called the Obligee, in the penal sum of the dollar amount of the bid submitted by the named Principal to the Obligee on _____ to undertake the project known as: _____

The penal sum referred to herein shall be the dollar amount of the Principal's bid to the Obligee, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to the Obligee. In no case shall the penal sum exceed the amount of _____ DOLLARS (\$_____).

(If the above line is left blank, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if completed, the amount stated must not be less than the full amount of the bid, including alternates, in dollars and cents. A percentage is not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above named Principal has submitted a bid on the above referred project;

NOW, THEREFORE, if the Obligee accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, and specifications; and in the event the Principal pays to the Obligee the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid and such larger amount for which the Obligee may in good faith contract with the next lowest bidder to perform the work covered by the bid; or in the event the Obligee does not award the contract to the next lowest bidder resubmits the project for bidding, the Principal will pay the Obligee the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be void, otherwise to remain in full force and effect.

IF THE OBLIGEE accepts the bid of the Principal, and the Principal within ten days after awarding the contract, enters into a proper contract in accordance with the bid, plans, details, and specifications; which said contract is made a part of this bond the same as though set forth herein, and

IT THE SAID Principal shall well and faithfully perform each and every condition of such contract; and indemnify the Obligee against all damage suffered by failure to perform such contract according to the provisions thereof and in accordance with the plans, details and specifications therefore; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of said contract or in or to the plans and specifications therefore shall in any wise affect the obligations of said

such Surety on this bond, and it does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to work or to the specifications.

SIGNED AND SEALED This ____ day of _____ 2024.

PRINCIPAL:

BY: _____

TITLE: _____

SURETY: _____

BY: _____

SURETY COMPANY ADDRESS:

Street

City

State

Zip

SURETY AGENT'S ADDRESS:

Agency Name

Street

City

State

Zip

Email Address

- C. Combination Bids, if provided should list the nomenclature of bid packages listed herein. For example a Bidder may wish to bid a combination of 1A and 16A, and if so, then a statement should be attached to this form that states the combination bid included work for Bid Packages 1A and 16A. Alternates for each package should be addressed in the separate attached form as well.
- C. **PROPOSAL SCHEDULE:** Bidders are cautioned that the following information should be fully completed including Base Bids and Alternates for the Bid Packages for which the Contractor wishes to be considered. Failure to do so may result in disqualification of the Bidder's Proposal at the Owner's discretion.

DESCRIPTION	TOTAL OF ALL LABOR & MATERIALS FOR THE SUM OF: (Write in words and figures)
1A – GENERAL WORK & LABOR	
Bid Package 1A General Work & Labor Base Bid:	BASE BID _____ (\$ _____)
Bid Package 1A Unit Price Dumpsters	Each dumpster _____ (\$ _____) <i>Allowance included in Base Bid: 10 30-cubic-yard dumpsters for use by the Owner and all contractors during project.</i>
Bid Package 1A Unit Price Labor	General Labor per hour _____ (\$ _____) Skilled Carpenter per hour _____ (\$ _____) <i>Allowance included in Base Bid: 100 hours of General Labor, 100 hours of Skilled Carpenter and 100 hours for one general laborer to be used at Owner discretion during project.</i>
Bid Package 1A Unit Price Sawcut, Excavate, Haul, Fill, Compact, & Concrete	Sawcut concrete, remove concrete, excavate, fill, haul, provide and install new fill and replace with new concrete. Per Cubic Yard _____ (\$ _____)
Bid Package 1A Alternate #1 INTERIOR METAL LINER	ADD TO / DEDUCT FROM BASE BID _____ (\$ _____)
15B – MECHANICAL	
Bid Package 15B Mechanical Base Bid:	BASE BID _____ (\$ _____)
Bid Package 15B Unit Price Labor	General Labor per hour _____ (\$ _____) Skilled Mechanical per hour _____ (\$ _____) <i>Allowance included in Base Bid: 50 hours of one skilled mechanical labor and 50 hours for General to be used at Owner discretion during project.</i>

DESCRIPTION	TOTAL OF ALL LABOR & MATERIALS FOR THE SUM OF: (Write in words and figures)
16A – ELECTRICAL	
Bid Package 16A Electrical Base Bid:	BASE BID _____ (\$ _____)
Bid Package 16A Unit Price Labor	General Labor per hour _____ (\$ _____) Skilled Electrical per hour _____ (\$ _____) <i>Allowance included in Base Bid: 50 hours of one skilled electrical labor and 50 hours for General to be used at Owner discretion during project.</i>

Note: Contractors are to rely on their own investigation of existing conditions and not the photographs provided in the drawings. The bidding documents are intended to show scope of work necessary to complete the contract.

D. ACCEPTANCE

BIDDER:

SIGNED BY

ADDRESS: _____

Type of Business Entity:

 (Corporate, Partnership, Individual, Etc.)

List all individuals with financial interest in the Business Entity:

President of Business Entity _____

Secretary of Business Entity _____

If a Business Entity is organized under laws of the state of _____

_____ bid dated this _____ day of _____ 2024.

I, the undersigned do attest that I have read all parts of the bid documents and do attest that our company has had all questions on the scope of the project and contract language answered by the Owner or Architect prior to submitting this bid. And that our company intends to execute a contract, perform work, and complete the project by all terms and conditions of the bid and contract documents we have reviewed during the bidding process, without any exceptions. I attest that our company is not debarred from public construction contracts in the State of Ohio.

TITLE OF SIGNER: _____

SIGNATURE _____

NON-COLLUSION BID AFFIDAVIT

STATE OF _____)

SS”

COUNTY OF _____)

_____, being first duly sworn, deposes.

And says that he/she is _____ for

_____ the party making the
(NAME OF COMPANY)

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

AFFIANT

Sworn to and subscribed before me, a Notary Public, on this

_____ day of _____, 2024.

NOTARY PUBLIC

My commission expires _____, _____.

END OF SECTION 00400

SECTION 00450 – CONTRACTOR QUALIFICATIONS STATEMENT

PART I - Contractor Qualifications Statement

- A. The Contractor Qualifications Statement included in this specification section must be completed by any Bidder requested by Owner or Architect to provide it after bids for the Work have been submitted.
 - 1. Bidder will fill out the form in its entirety and submit it upon request within 3 days of the bid opening.
 - 2. This document may be used to determine the lowest and best bidder.



AIA[®] Document A305[™] – 2020

Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY: _____ **SUBMITTED TO:** _____
(Organization name and address.) (Organization name and address.)

TYPE OF WORK TYPICALLY PERFORMED

(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)

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

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:

(Check all that apply.)

- Exhibit A – General Information
- Exhibit B – Financial and Performance Information
- Exhibit C – Project-Specific Information
- Exhibit D – Past Project Experience
- Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION

The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

Organization's Authorized Representative Date
Signature

Printed Name and Title

NOTARY

State of: _____
County of: _____
Signed and sworn to before me this day of _____

Notary Signature

My commission expires: _____

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, _____, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 12:01:15 ET on 06/20/2022 under Order No. 2114319465 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A305™ – 2020, Contractor's Qualification Statement, as published by the AIA in its software, other than changes shown in the attached final document by underscoring added text and striking over deleted text.

(Signed)

(Title)

(Dated)



AIA[®] Document A305™ – 2020 Exhibit A

General Information

This Exhibit is part of the Contractor’s Qualification Statement, submitted by _____ and dated the _____ day of _____ in the year _____.
(In words, indicate day, month and year.)

§ A.1 ORGANIZATION

§ A.1.1 Name and Location

§ A.1.1.1 Identify the full legal name of your organization.

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

§ A.1.1.4 Identify the address of your organization’s principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

§ A.1.2 Legal Status

§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

- .1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.
- .2 If your organization is a partnership, identify its partners and its date of organization.
- .3 If your organization is individually owned, identify its owner and date of organization.

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

- .4** If the form of your organization is other than those listed above, describe it and identify its individual leaders:

§ A.1.2.2 Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

§ A.1.3 Other Information

§ A.1.3.1 How many years has your organization been in business?

§ A.1.3.2 How many full-time employees work for your organization?

§ A.1.3.3 List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

§ A.1.3.4 Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

§ A.2 EXPERIENCE

§ A.2.1 Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

§ A.2.2 State your organization's total dollar value of work currently under contract.

§ A.2.3 Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

§ A.2.4 State your organization's average annual dollar value of construction work performed during the last five years.

§ A.3 CAPABILITIES

§ A.3.1 List the categories of work that your organization typically self-performs.

§ A.3.2 Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

§ A.3.3 Does your organization provide design collaboration or pre-construction services? If so, describe those services.

§ A.3.4 Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

§ A.3.5 Does your organization use a project management information system? If so, identify that system.

§ A.4 REFERENCES

§ A.4.1 Identify three client references:

(Insert name, organization, and contact information)

§ A.4.2 Identify three architect references:

(Insert name, organization, and contact information)

§ A.4.3 Identify one bank reference:

(Insert name, organization, and contact information)

§ A.4.4 Identify three subcontractor or other trade references:

(Insert name, organization, and contact information)



Financial and Performance Information

This Exhibit is part of the Contractor’s Qualification Statement, submitted by and dated the day of in the year (In words, indicate day, month and year.)

§ B.1 FINANCIAL

§ B.1.1 Federal tax identification number:

§ B.1.2 Attach financial statements for the last three years prepared in accordance with Generally Accepted Accounting Principles, including your organization’s latest balance sheet and income statement. Also, indicate the name and contact information of the firm that prepared each financial statement.

§ B.1.3 Has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, been the subject of any bankruptcy proceeding within the last ten years?

§ B.1.4 Identify your organization’s preferred credit rating agency and identification information. (Identify rating agency, such as Dun and Bradstreet or Equifax, and insert your organization’s identification number or other method of searching your organization’s credit rating with such agency.)

§ B.2 DISPUTES AND DISCIPLINARY ACTIONS

§ B.2.1 Are there any pending or outstanding judgments, arbitration proceedings, bond claims, or lawsuits against your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A, Section 1.2, in which the amount in dispute is more than \$75,000? (If the answer is yes, provide an explanation.)

§ B.2.2 In the last five years has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management: (If the answer to any of the questions below is yes, provide an explanation.)

- .1 failed to complete work awarded to it?
- .2 been terminated for any reason except for an owners’ convenience?

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

.3 had any judgments, settlements, or awards pertaining to a construction project in which your organization was responsible for more than \$75,000?

.4 filed any lawsuits or requested arbitration regarding a construction project?

§ B.2.3 In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management; or any of the individuals listed in Exhibit A Section 1.2:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 been convicted of, or indicted for, a business-related crime?

.2 had any business or professional license subjected to disciplinary action?

.3 been penalized or fined by a state or federal environmental agency?



AIA[®] Document A305™ – 2020 Exhibit C

Project Specific Information

This Exhibit is part of the Contractor’s Qualification Statement, submitted by _____ and dated the _____ day of _____ in the year _____.
(In words, indicate day, month and year.)

PROJECT:

(Name and location or address.)

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

CONTRACTOR’S PROJECT OFFICE:

(Identify the office out of which the contractor proposes to perform the work for the Project.)

TYPE OF WORK SOUGHT

(Indicate the type of work you are seeking for this Project, such as general contracting, construction manager as constructor, design-build, HVAC subcontracting, electrical subcontracting, plumbing subcontracting, etc.)

CONFLICT OF INTEREST

Describe any conflict of interest your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A Section 1.2, may have regarding this Project.

§ C.1 PERFORMANCE OF THE WORK

§ C.1.1 When was the Contractor’s Project Office established?

§ C.1.2 How many full-time field and office staff are respectively employed at the Contractor’s Project Office?

§ C.1.3 List the business license and contractor license or registration numbers for the Contractor’s Project Office that pertain to the Project.

§ C.1.4 Identify key personnel from your organization who will be meaningfully involved with work on this Project and indicate (1) their position on the Project team, (2) their office location, (3) their expertise and experience, and (4) projects similar to the Project on which they have worked.

§ C.1.5 Identify portions of work that you intend to self-perform on this Project.

§ C.1.6 To the extent known, list the subcontractors you intend to use for major portions of work on the Project.

§ C.2 EXPERIENCE RELATED TO THE PROJECT

§ C.2.1 Complete Exhibit D to describe up to four projects performed by the Contractor's Project Office, either completed or in progress, that are relevant to this Project, such as projects in a similar geographic area or of similar project type. If you have already completed Exhibit D, but want to provide further examples of projects that are relevant to this Project, you may complete Exhibit E.

§ C.2.2 State the total dollar value of work currently under contract at the Contractor's Project Office:

§ C.2.3 Of the amount stated in Section C.2.2, state the dollar value of work that remains to be completed:

§ C.2.4 State the average annual dollar value of construction work performed by the Contractor's Project Office during the last five years.

§ C.2.5 List the total number of projects the Contractor's Project Office has completed in the last five years and state the dollar value of the largest contract the Contractor's Project Office has completed during that time.

§ C.3 SAFETY PROGRAM AND RECORD

§ C.3.1 Does the Contractor's Project Office have a written safety program?

§ C.3.2 List all safety-related citations and penalties the Contractor's Project Office has received in the last three years.

§ C.3.3 Attach the Contractor's Project Office's OSHA 300a Summary of Work-Related Injuries and Illnesses form for the last three years.

§ C.3.4 Attach a copy of your insurance agent's verification letter for your organization's current workers' compensation experience modification rate and rates for the last three years.

§ C.4 INSURANCE

§ C.4.1 Attach current certificates of insurance for your commercial general liability policy, umbrella insurance policy, and professional liability insurance policy, if any. Identify deductibles or self-insured retentions for your commercial general liability policy.

§ C.4.2 If requested, will your organization be able to provide property insurance for the Project written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis?

§ C.4.3 Does your commercial general liability policy contain any exclusions or restrictions of coverage that are prohibited in AIA Document A101-2017, Exhibit A, Insurance A.3.2.2.2? If so, identify.

§ C.5 SURETY

§ C.5.1 If requested, will your organization be able to provide a performance and payment bond for this Project?

§ C.5.2 Surety company name:

§ C.5.3 Surety agent name and contact information:

§ C.5.4 Total bonding capacity:

§ C.5.5 Available bonding capacity as of the date of this qualification statement:



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Document A305™ – 2020 Exhibit D

Contractor's Past Project Experience

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:
SUSTAINABILITY CERTIFICATIONS				



AIA[®]

Document A305™ – 2020 Exhibit E

Contractor's Past Project Experience, Continued

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:
SUSTAINABILITY CERTIFICATIONS				

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SECTION 00620 - CONTRACTOR'S CERTIFICATE OF INSURANCES

PART I- GENERAL REQUIREMENTS

- A. Reference: General Conditions.
 - 1. Instructions: Form shall be executed in duplicate by the insurance company (ies) and the Contractor, signed and forwarded to the **OWNER**.
 - 2. Certificates shall be submitted to the Construction Manager prior to commencement of work.
 - 3. Owner requires liability coverage of a minimum of \$1,000,000.00 from each contractor and the same coverage for owned and non-owned vehicles.
 - 4. Owner will require submission of Certificate of insurances and Workers' Compensation Certification prior to execution of a Contract of this Work.

- B. **FORM**
 - 1. Submit insurance coverage on A.I.A. Document #G705 "Certificate of Insurance" or "Acord Certificate of Insurance 25-2 (7/90) and A.I.A. Document #G715 Supplemental Attachment.

END OF SECTION 00620

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SECTION 00621 - CONTRACTOR'S FORM OF GUARANTEE

PART 1 - GENERAL REQUIREMENTS

- A. REFERENCE: General Conditions.
- B. INSTRUCTIONS: Form shall be executed in duplicate and forwarded to:

BOARD OF COMMISSIONERS OF MIAMI COUNTY, OHIO
 201 West Main Street
 Troy, Ohio 45373

PART 2 - FORM

Date: _____, 2024
 Project: A NEW ADDITION FOR THE
 MIAMI COUNTY SHERIFF TACTICAL VEHICLE STORAGE FACILITY
 2050 N. County Rd. 25A
 Troy, Ohio 45373

Date of Contract: _____, 2024

The undersigned, Contractor for the

_____ work on the above project, hereby guarantees all the workmanship and/or materials installed by him (them) or his (their) subcontractors to be of the quality that will comply with all the specific requirements of the Specifications and other Contract Documents governing the work under the Contract for the above project, and insures the Owner against all defects of material and/or workmanship for a period of one (1) year from and after the completion of the project and its acceptance by the Owner.

It is agreed that if, after due inspection, the Architect/Owner shall decide that by reason of this Guarantee, the replacement or repair of any work is in his opinion, necessary, such defective work will be repaired or removed and new work replaced meeting all the requirements of the Contract Documents, same being done promptly and without expense to the Owner, including all costs for replacing or repairing other work damaged by the removal and replacement of the work covered by this Guarantee.

 Contractor

By _____
 Title _____

The Owner hereby certifies that the date of acceptance of the building on the above Contract was _____, 2024

Board of Commissioners of Miami County, Ohio

By _____

END OF SECTION 00621

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SECTION 00640 - CONTRACTOR'S OF RELEASE OF LIENS and CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS

PART I- GENERAL

- A. GENERAL REQUIREMENTS
 - 1. Reference: General Conditions.
 - 2. Instructions: Forms shall be executed in duplicate and forwarded to the Architect.

- B. FORMS
 - 1. Release of Liens shall be form on following page "Waiver/Release of Lien".
 - 2. Affidavit shall be A.I.A. Document #G706A "Contractor's Affidavit of Release of Liens".

- C. SUBMIT WITH EACH AND EVERY APPLICATION FOR PAYMENT completed Release of Lien Form w/ Affidavit G706A indicating portion of work complete. See also Section 01290 "Applications for Payments" and 01770 "Project Closeout".



AIA® Document G706®A – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*
 A New Addition for hte Miami County
 Sheriff Tactical Vehicle Storage
 Facility
 2050 N. CR 25A, Troy, Ohio 45373
TO OWNER: *(Name and address)*
 Board of Miami County
 Commissioners
 201 W Main Street
 Troy, Ohio 45373

ARCHITECT'S PROJECT NUMBER:

CONTRACT FOR:
CONTRACT DATED:

OWNER:
 ARCHITECT:
 CONTRACTOR:
 SURETY:
 OTHER:

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
 My Commission Expires:

Waiver/Release of Lien

Instructions: This document is to be attached to each pay request. All contractors must include an executed copy from all subcontractors and material suppliers. For final pay requests the contractor must also provide an AIA document #G706A and attach all required releases.

Contractor: _____ Architect's Project Number: **23010**

Contractor's Address: _____ Date: _____

Project Name: **A NEW ADDITION FOR THE MIAMI COUNTY SHERIFF TACTICAL VEHICLE**

STORAGE FACILITY

Project Address: _____

Contract For / Bid Pkg: _____ Contract Date: _____

The undersigned hereby states that all laborers, subcontractors, and material/equipment suppliers have been paid in full for the above referenced project. Therefore, the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the contract referenced above is waived and any current liens are released. This waiver/release is conditional upon receipt of the **final payment** or **partial payment** (circle one) in the amount of \$ _____.

Sub-Contractor / Supplier Information:

Contractor / Supplier: _____ Trade / Nature of Work: _____

Address: _____ Contract Date: _____

Dates /Work Period Covered: _____

Subscribed and sworn to me on this date: _____

Notary Public: _____

My Commission Expires on: _____

BY: _____
(Signature of Authorized representative)

(Title)

END OF SECTION 00640

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AIA® Document A105® – 2017

Standard Short Form of Agreement Between Owner and Contractor

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

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

Board of Miami County Commissioners
201 W Main Street
Troy, Ohio 45373

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

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

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

A New Addition for the Miami County Sheriff Tactical Vehicle Storage Facility
2050 North County Road 25A, Troy, Ohio 45373

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

WDC Group LLC
23 South Center Street
Springfield, Ohio 45502
Telephone Number: 937.325.9991
Fax Number: 937.325.9804

The Owner and Contractor agree as follows.

TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3 CONTRACT SUM

4 PAYMENTS

5 INSURANCE

6 GENERAL PROVISIONS

7 OWNER

8 CONTRACTOR

9 ARCHITECT

10 CHANGES IN THE WORK

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12 PAYMENTS AND COMPLETION

13 PROTECTION OF PERSONS AND PROPERTY

14 CORRECTION OF WORK

15 MISCELLANEOUS PROVISIONS

16 TERMINATION OF THE CONTRACT

17 OTHER TERMS AND CONDITIONS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contractor shall complete the Work described in the Contract Documents for the Project. The Contract Documents consist of

- .1 this Agreement signed by the Owner and Contractor;
- .2 the drawings and specifications prepared by the Architect, dated April 12, 2024 , and enumerated as follows:

Drawings:

Number	Title	Date
<u>As per Exhibit A</u>		

Specifications:

Section	Title	Pages
<u>As per Exhibit B</u>		

- .3 addenda prepared by the Architect as follows:

Number	Date	Pages
<u>TBD</u>		

Init.

- .4 written orders for changes in the Work, pursuant to Article 10, issued after execution of this Agreement; and
- .5 other documents, if any, identified as follows:

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The Contract Time is the number of calendar days available to the Contractor to substantially complete the Work.

§ 2.2 Date of Commencement:

Unless otherwise set forth below, the date of commencement shall be the date of this Agreement.
(Insert the date of commencement if other than the date of this Agreement.)

As per Project Manual and Specifications

§ 2.3 Substantial Completion:

Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion, as defined in Section 12.5, of the entire Work:
(Check the appropriate box and complete the necessary information.)

Not later than () calendar days from the date of commencement.

By the following date:

ARTICLE 3 CONTRACT SUM

§ 3.1 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work. Subject to additions and deductions in accordance with Article 10, the Contract Sum is:

(\$)

§ 3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:
(Itemize the Contract Sum among the major portions of the Work.)

Portion of the Work	Value
---------------------	-------

§ 3.3 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and hereby accepted by the Owner:

(Identify the accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.4 Allowances, if any, included in the Contract Sum are as follows:
(Identify each allowance.)

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

§ 3.5 Unit prices, if any, are as follows:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
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ARTICLE 4 PAYMENTS

§ 4.1 Based on Contractor’s Applications for Payment certified by the Architect, the Owner shall pay the Contractor, in accordance with Article 12, as follows:

(Insert below timing for payments and provisions for withholding retainage, if any.)

As per Project Manual and Specifications

§ 4.2 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate below, or in the absence thereof, at the legal rate prevailing at the place of the Project.

(Insert rate of interest agreed upon, if any.)

As per Project Manual and Specifications %

ARTICLE 5 INSURANCE

§ 5.1 The Contractor shall maintain the following types and limits of insurance until the expiration of the period for correction of Work as set forth in Section 14.2, subject to the terms and conditions set forth in this Section 5.1:

§ 5.1.1 Commercial General Liability insurance for the Project, written on an occurrence form, with policy limits of not less than As per Project Manual and Specifications (\$) each occurrence, As per Project Manual and Specifications (\$) general aggregate, and As per Project Manual and Specifications (\$) aggregate for products-completed operations hazard.

§ 5.1.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than As per Project Manual and Specifications (\$) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

§ 5.1.3 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided that such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 5.1.1 and 5.1.2, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 5.1.4 Workers’ Compensation at statutory limits.

§ 5.1.5 Employers’ Liability with policy limits not less than As per Project Manual and Specifications (\$) each accident, As per Project Manual and Specifications (\$) each employee, and As per Project Manual and Specifications (\$) policy limit.

§ 5.1.6 The Contractor shall provide builder’s risk insurance to cover the total value of the entire Project on a replacement cost basis.

§ 5.1.7 Other Insurance Provided by the Contractor

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits
<u>As per Project Manual and Specifications</u>	

§ 5.2 The Owner shall be responsible for purchasing and maintaining the Owner’s usual liability insurance and shall provide property insurance to cover the value of the Owner’s property. The Contractor is entitled to receive an increase in the Contract Sum equal to the insurance proceeds related to a loss for damage to the Work covered by the Owner’s property insurance.

§ 5.3 The Contractor shall obtain an endorsement to its Commercial General Liability insurance policy to provide coverage for the Contractor's obligations under Section 8.12.

§ 5.4 Prior to commencement of the Work, each party shall provide certificates of insurance showing their respective coverages.

§ 5.5 Unless specifically precluded by the Owner's property insurance policy, the Owner and Contractor waive all rights against (1) each other and any of their subcontractors, suppliers, agents, and employees, each of the other; and (2) the Architect, Architect's consultants, and any of their agents and employees, for damages caused by fire or other causes of loss to the extent those losses are covered by property insurance or other insurance applicable to the Project, except such rights as they have to the proceeds of such insurance.

ARTICLE 6 GENERAL PROVISIONS

§ 6.1 The Contract

The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written modification in accordance with Article 10.

§ 6.2 The Work

The term "Work" means the construction and services required by the Contract Documents, and includes all other labor, materials, equipment, and services provided, or to be provided, by the Contractor to fulfill the Contractor's obligations.

§ 6.3 Intent

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.

§ 6.4 Ownership and Use of Architect's Drawings, Specifications and Other Documents

Documents prepared by the Architect are instruments of the Architect's service for use solely with respect to this Project. The Architect shall retain all common law, statutory, and other reserved rights, including the copyright. The Contractor, subcontractors, sub-subcontractors, and suppliers are authorized to use and reproduce the instruments of service solely and exclusively for execution of the Work. The instruments of service may not be used for other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Architect.

§ 6.5 Electronic Notice

Written notice under this Agreement may be given by one party to the other by email as set forth below.

(Insert requirements for delivering written notice by email such as name, title, and email address of the recipient, and whether and how the system will be required to generate a read receipt for the transmission.)

ARTICLE 7 OWNER

§ 7.1 Information and Services Required of the Owner

§ 7.1.1 If requested by the Contractor, the Owner shall furnish all necessary surveys and a legal description of the site.

§ 7.1.2 Except for permits and fees under Section 8.7.1 that are the responsibility of the Contractor, the Owner shall obtain and pay for other necessary approvals, easements, assessments, and charges.

§ 7.1.3 Prior to commencement of the Work, at the written request of the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence.

§ 7.2 Owner's Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work until the correction is made.

§ 7.3 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case, the Architect may withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the cost of correction, provided the actions of the Owner and amounts charged to the Contractor were approved by the Architect.

§ 7.4 Owner's Right to Perform Construction and to Award Separate Contracts

§ 7.4.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project.

§ 7.4.2 The Contractor shall coordinate and cooperate with the Owner's own forces and separate contractors employed by the Owner.

ARTICLE 8 CONTRACTOR

§ 8.1 Review of Contract Documents and Field Conditions by Contractor

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

§ 8.1.2 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. Before commencing activities, the Contractor shall (1) take field measurements and verify field conditions; (2) carefully compare this and other information known to the Contractor with the Contract Documents; and (3) promptly report errors, inconsistencies, or omissions discovered to the Architect.

§ 8.2 Contractor's Construction Schedule

The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work.

§ 8.3 Supervision and Construction Procedures

§ 8.3.1 The Contractor shall supervise and direct the Work using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work.

§ 8.3.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner, through the Architect, the names of subcontractors or suppliers for each portion of the Work. The Contractor shall not contract with any subcontractor or supplier to whom the Owner or Architect have made a timely and reasonable objection.

§ 8.4 Labor and Materials

§ 8.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work.

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

§ 8.5 Warranty

The Contractor warrants to the Owner and Architect that: (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents. Any material or equipment warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 12.5.

§ 8.6 Taxes

The Contractor shall pay sales, consumer, use, and similar taxes that are legally required when the Contract is executed.

§ 8.7 Permits, Fees and Notices

§ 8.7.1 The Contractor shall obtain and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work.

§ 8.7.2 The Contractor shall comply with and give notices required by agencies having jurisdiction over the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs. The Contractor shall promptly notify the Architect in writing of any known inconsistencies in the Contract Documents with such governmental laws, rules, and regulations.

§ 8.8 Submittals

The Contractor shall promptly review, approve in writing, and submit to the Architect shop drawings, product data, samples, and similar submittals required by the Contract Documents. Shop drawings, product data, samples, and similar submittals are not Contract Documents.

§ 8.9 Use of Site

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, the Contract Documents, and the Owner.

§ 8.10 Cutting and Patching

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

§ 8.11 Cleaning Up

The Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, the Contractor shall remove its tools, construction equipment, machinery, and surplus material; and shall properly dispose of waste materials.

§ 8.12 Indemnification

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them, from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

ARTICLE 9 ARCHITECT

§ 9.1 The Architect will provide administration of the Contract as described in the Contract Documents. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 9.2 The Architect will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the Work.

§ 9.3 The Architect will not have control over or charge of, and will not be responsible for, construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. The Architect will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

§ 9.4 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor.

§ 9.5 The Architect has authority to reject Work that does not conform to the Contract Documents.

§ 9.6 The Architect will promptly review and approve or take appropriate action upon Contractor's submittals, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 9.7 On written request from either the Owner or Contractor, the Architect will promptly interpret and decide matters concerning performance under, and requirements of, the Contract Documents.

§ 9.8 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from the Contract Documents, and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 9.9 The Architect's duties, responsibilities, and limits of authority as described in the Contract Documents shall not be changed without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

ARTICLE 10 CHANGES IN THE WORK

§ 10.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract, consisting of additions, deletions or other revisions, and the Contract Sum and Contract Time shall be adjusted accordingly, in writing. If the Owner and Contractor cannot agree to a change in the Contract Sum, the Owner shall pay the Contractor its actual cost plus reasonable overhead and profit.

§ 10.2 The Architect may authorize or order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. Such authorization or order shall be in writing and shall be binding on the Owner and Contractor. The Contractor shall proceed with such minor changes promptly.

§ 10.3 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be subject to equitable adjustment.

ARTICLE 11 TIME

§ 11.1 Time limits stated in the Contract Documents are of the essence of the Contract.

§ 11.2 If the Contractor is delayed at any time in progress of the Work by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes beyond the Contractor's control, the Contract Time shall be subject to equitable adjustment.

§ 11.3 Costs caused by delays or by improperly timed activities or defective construction shall be borne by the responsible party.

ARTICLE 12 PAYMENTS AND COMPLETION

§ 12.1 Contract Sum

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

§ 12.2 Applications for Payment

§ 12.2.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for Work completed in accordance with the values stated in this Agreement. The Application shall be supported by data substantiating the Contractor's right to payment as the Owner or Architect may reasonably require, such as evidence of payments made to, and waivers of liens from, subcontractors and suppliers. Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 12.2.2 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or other encumbrances adverse to the Owner's interests.

§ 12.3 Certificates for Payment

The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in part; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole. If certification or notification is not made within such seven day period, the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time and the Contract Sum shall be equitably adjusted due to the delay.

§ 12.4 Progress Payments

§ 12.4.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner provided in the Contract Documents.

§ 12.4.2 The Contractor shall promptly pay each subcontractor and supplier, upon receipt of payment from the Owner, an amount determined in accordance with the terms of the applicable subcontracts and purchase orders.

§ 12.4.3 Neither the Owner nor the Architect shall have responsibility for payments to a subcontractor or supplier.

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

§ 12.5 Substantial Completion

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

§ 12.5.2 When the Contractor believes that the Work or designated portion thereof is substantially complete, it will notify the Architect and the Architect will make an inspection to determine whether the Work is substantially complete. When the Architect determines that the Work is substantially complete, the Architect shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, establish the responsibilities of the Owner and Contractor, and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 12.6 Final Completion and Final Payment

§ 12.6.1 Upon receipt of a final Application for Payment, the Architect will inspect the Work. When the Architect finds the Work acceptable and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment.

§ 12.6.2 Final payment shall not become due until the Contractor submits to the Architect releases and waivers of liens, and data establishing payment or satisfaction of obligations, such as receipts, claims, security interests, or encumbrances arising out of the Contract.

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

ARTICLE 13 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including all those required by law in connection with performance of the Contract. The Contractor shall take reasonable precautions to prevent damage, injury, or loss to employees on the Work and other persons who may be affected thereby, the Work and materials and equipment to be incorporated therein, and other property at the site or adjacent thereto. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, or by anyone for whose acts the Contractor may be liable.

ARTICLE 14 CORRECTION OF WORK

§ 14.1 The Contractor shall promptly correct Work rejected by the Architect as failing to conform to the requirements of the Contract Documents. The Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement, and additional testing.

§ 14.2 In addition to the Contractor's other obligations including warranties under the Contract, the Contractor shall, for a period of one year after Substantial Completion, correct work not conforming to the requirements of the Contract Documents.

§ 14.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 7.3.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 Assignment of Contract

Neither party to the Contract shall assign the Contract as a whole without written consent of the other.

§ 15.2 Tests and Inspections

§ 15.2.1 At the appropriate times, the Contractor shall arrange and bear cost of tests, inspections, and approvals of portions of the Work required by the Contract Documents or by laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.

§ 15.2.2 If the Architect requires additional testing, the Contractor shall perform those tests.

§ 15.2.3 The Owner shall bear cost of tests, inspections, or approvals that do not become requirements until after the Contract is executed. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 15.3 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules.

ARTICLE 16 TERMINATION OF THE CONTRACT

§ 16.1 Termination by the Contractor

If the Work is stopped under Section 12.3 for a period of 14 days through no fault of the Contractor, the Contractor may, upon seven additional days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead and profit, and costs incurred by reason of such termination.

§ 16.2 Termination by the Owner for Cause

§ 16.2.1 The Owner may terminate the Contract if the Contractor

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

§ 16.2.2 When any of the above reasons exist, the Owner, after consultation with the Architect, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may

- .1 take possession of the site and of all materials thereon owned by the Contractor, and
- .2 finish the Work by whatever reasonable method the Owner may deem expedient.

§ 16.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 16.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 16.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 16.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 17 OTHER TERMS AND CONDITIONS

(Insert any other terms or conditions below.)

17.1 Claims, disputes or other matters in question between the parties to this Agreement arising out of or relating to this Agreement or breach thereof shall be subject to and decided by non-binding mediation in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association (AAA) currently in effect unless the parties mutually agree otherwise. Claims, disputes, or other matters in question following this process will be determined by binding arbitration in accordance with AAA rules.

17.2 All parties are hereby notified that in the event the original Contractor cannot maintain the Job Schedule as set out in this Agreement, the Owner has the right to add additional Contractors to complete the work or if the work is not of a professional quality, the Owner additionally has the right to have another Contractor finish or fix said work at the cost of the original Contractor.

17.3 The Contractor agrees to hold both the Owner and Architect harmless from any damages or liability caused by errors or omissions of the Contractor.

17.4 Right of Offset - If actions by Contractor damage other work on the Project or leave the work uncompleted as discussed in the contract schedule, the Owner may, following proper notice, withhold payment in the amount necessary to have proper work completed to a level of quality existing in the rest of the Project. Contractor waives rights of lien associated with non-payment due to offset actions by Owner.

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

(If required by law, insert cancellation period, disclosures or other warning statements above the signatures.)

As the above stated Contractor, I attest that we have not:

1) Scaled these contract documents to determine quantities for bids, as we have field verified and taken our own dimensions to determine the quantities for our bid. _____ (initials)

2) We believe all the scales noted on the drawings are correct; so as to give us an "intent" of what is to be bid. We have not relied on any other dimensions than what are noted in text and dimension lines. _____ (initials)

3) We have thoroughly read the contract documents and have asked any and all questions we had on the intent of the scope of work, or supposed errors and omissions contained in these drawings, during the bid process and prior to signing this contract.

4) We will not be asserting a claim for additional time or money associated with the three issues listed above. _____ (initials)

5) By executing this Agreement, I _____ do state on behalf of _____, that our company believes it has accurately interpreted the contract documents and have asked for clarification and received satisfactory response for all items not thoroughly addressed or appeared to be conflicting in the Contract Documents and have found all stipulations and requirements contained in this Agreement are as stated in the bid specifications and are enforceable according to Ohio Law, including but not limited to the Owner's right of offset, and the Owner's right to assess liquidated damages for work not completed according to the milestones listed on the

| project schedule contained in the contract documents.

OWNER *(Signature)*

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

LICENSE NO.:

JURISDICTION:



Init.

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User Notes:

(2002013001)

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Christina Cave, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 11:54:05 ET on 04/11/2024 under Order No. 2114434408 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A105™ – 2017, Standard Short Form of Agreement Between Owner and Contractor, other than changes shown in the attached final document by underscoring added text and striking over deleted text.

(Signed)

(Title)

(Dated)

EXHIBIT A:

C0	COVER SHEET
LS1	LIFE SAFETY
C1	SITE PLAN
D1	DEMO PLAN
S1	STRUCTURAL NOTES, FOUNDATION PLAN & DETAILS
A1	FLOOR PLAN, DETAILS, & SCHEDULE
A2	ELEVATIONS & ROOF PLAN
A3	WALL & BUILDING SECTIONS
M1	MECHANICAL PLAN
E1	ELECTRICAL PLAN

EXHIBIT B:

00100 Notice to Bidders
00101 Invitation to Bid
00200 Instructions to Bidders
00210 Supplementary Instruction to Bidders
00300 Construction Schedule
00400 Bid Form
00450 Contractor's Qualification Statement
00620 Certificate of Insurance
00621 Contractor's Form of Guarantee
00640 Release of Liens
00700 Contract & General Conditions - AIA Document A105
00800 Supplemental General Conditions
00850 Prevailing Wage
01110 Summary of Work
01210 Allowances
01230 Alternates
01250 Change Order Procedures
01290 Applications for Payment
01310 Project Meetings
01330 Submittals
01500 Temporary Facilities
01600 Materials and Equipment
01630 Substitutions
01710 Cleaning
01770 Contract Closeout
02060 Building Demolition
02226 Excavation and Backfilling
02300 Earthwork
02511 Hot-Mixed Asphalt Paving
02900 Landscaping
03300 Cast-in-Place Concrete
05500 Miscellaneous Metals
06100 Rough Carpentry
07200 Insulation
07270 Weather Barriers
07600 Flashing and Sheet Metal
07900 Sealants
08110 Hollow Metal Doors and Frames
08360 Sectional Overhead Doors
08710 Door Hardware
09910 Painting
10520 Fire Extinguishers and Cabinets
13554 Pre-Engineered Wood Frame Building
15050 Basic Mechanical Materials and Methods
15080 HVAC Insulation
15145 Supports and Anchors
15190 Fuel Gas Piping
15623 Forced Air Furnaces
15625 Tube Heaters
15800 Air Distribution
15870 Power Ventilators
15890 Ductwork
15950 Testing, Adjusting, and Balancing
16000 Electrical General Provisions
16060 Wired Ground System
16080 Tests, Adjustments, and Inspections
16111 Conduit

16120 Wire and Cable, 600 Volts and Below
16123 Building Wire and Cable
16130 Boxes
16140 Wiring Devices
16170 Grounding and Bonding
16195 Electrical Identification
16321 Equipment Rough-In and Hook-Up
16338 Contactors
16440 Panel Boards
16450 Secondary Grounding
16476 Enclosed Circuit Breakers
16500 Lighting
16902 Electrical Controls and Relays

SECTION 00800 - SUPPLEMENTAL GENERAL CONDITIONS

GENERAL CONDITIONS

The following supplements modify, change, delete from or add to the "Standard Form of Agreement Between Owner and Contractor" AIA Document A105, 2017 Edition. The Supplemental Conditions shall be read with and as complementary to the Agreement, and are hereby made a part of the Contract. In the event of conflict, the Supplemental Conditions shall govern. Where any article of the Agreement is modified or deleted by these supplements, the unaltered provisions of that article, paragraph, subparagraph or clause shall remain in effect; provided however, if not incorporated therein, the Contract shall also be deemed to be amended to the extent necessary as required to comply with applicable provisions of Ohio law in effect on the date of the Contract execution. The Articles of the Supplemental Conditions use titles and numbers which relate to the Agreement.

ARTICLE 6 - GENERAL PROVISIONS

6.6.1.1 The precedence of the Contract Documents is in the following sequence:

1. THE AGREEMENT
2. ADDENDA or modifications of any nature to the Construction Documents take precedence over the original Construction Documents.
3. SPECIFICATIONS: where, should there be a conflict, the Architect shall decide which stipulation will provide the best installation.
4. CONTRACT DRAWINGS: where the precedence shall be drawings of a larger scale over those of smaller, figured dimensions over scaled dimensions, and noted materials over graphic indications.

6.6.1.2 Should the Contract Documents disagree as to quality or quantity of work required, the better quality or greater quantity shall be provided unless instruction is otherwise given by Architect in writing.

6.6.1.3 Where Contract Drawings show only a portion of the work in full detail and the remainder is shown only in outline, the portions in outline shall be executed as required for like portions shown in full detail. Where ornament or other detail is shown by starting only, such detail must be continued throughout the parts in which it is shown and throughout all other similar parts of the work unless otherwise explicitly required. Where items are shown in diagrammatic/schematic drawings, Contractor shall verify location with the Architect before installation.

6.6.1.4 The reference standards referred to in the Specifications shall be the edition current as of the date of the Contract Documents. References to non proprietary standards, codes and specifications, and to manufacturers' specifications, instructions and directions shall mean the date included with such reference. Where no date is given, references shall mean the latest edition in effect on the date of the bid receipt. Such references require that the Contractor become fully and adequately informed of the contents of such directions, specifications and codes, and shall properly apply that information so that the best possible use of the item, material or technique is achieved. Before such referenced information is utilized in the work, the Architect may request the Contractor to use editions of later date than specified. If a difference in cost is occasioned by such requirements, the Contract Sum will be adjusted accordingly by Change Order.

6.6.1.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, all copies of drawings and specifications reasonably necessary, as determined by the Architect, for the execution of the work. Additional sets of drawings and specifications will be furnished at the cost of reproduction.

6.7 MISCELLANEOUS DEFINITIONS

6.7.1 The term "product" as used in these Supplemental General Conditions includes materials, systems and equipment. Where materials, items, systems, etc. are referred to in the singular, such reference shall not service to limit the quantity required. Furnish quantities as required to complete the Work.

6.7.2 Wherever the words "furnish", "install", "provide", or equivalent words are used, without further limitation, they

shall mean the responsibility to furnish and completely install the device, equipment, or material named, together with all associated devices, equipment, materials, wiring, piping, etc., as may be required for a complete and operating installation.

6.7.3 **ARCHITECT**: The firm of WDC Group, Springfield, Ohio shall be known as the Architect. Where the word "Architect" is used in these Specifications, it shall mean a member of the firm or its authorized representative.

6.7.4 **OWNER**: Board of Miami County Commissioners shall be known as the Owner. Where the word "Owner" is used in these specifications, it shall mean an authorized representative of the OWNER.

ARTICLE 7 - OWNER

7.3.1 If the Contractor should neglect to prosecute the work or fail to perform any provisions of the Contract Documents, the Owner, after three (3) business day's written notice to the Contractor, may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

ARTICLE 8 - CONTRACTOR

8.1.1.2 Execution of the Contract by the Contractor is a representation that the Contractor agrees to the following provisions:

8.1.1.2.2 Responsibility of Construction Cost - Evaluating of the Owner's project budget, preliminary estimate of construction cost, if any, prepared by the Architect, represent the Architect's best judgment as a design professional familiar with the construction industry. It is recognized, however, that neither the Architect nor the Owner has control over the cost of labor, materials, or equipment, over contractor's methods of determining bid prices, or over competitive bids or negotiated prices will not vary from the Owner's project budget or from any estimate of construction cost or evaluation prepare or agreed to by the Architect.

8.1.1.2.3 The Architect nor Consultants make no warranty, either expressed or implied, as the Architect/Consultant's findings, recommendations, plans, specifications, or professional advice. The Architect/Consultants will endeavor to perform its services in accordance with generally accepted standards of practice in effect at the time of performance. Client recognizes that neither the Architect nor any of the Architect's subconsultants or subcontractors have any fiduciary responsibility to the client.

8.3.1.1 The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Architect. The superintendent shall not be changed except with the consent of the Architect, unless the superintendent proves to be unsatisfactory to the Contractor, and ceases to be in his employ. The superintendent shall represent the Contractor in The Contractor's absence, and all directions given to the Superintendent shall be as binding as if given to the Contractor. The Owner/Architect reserves the right to approve office project manager and/or the job site superintendent of the contractor's organization. **At any point in the construction phase the owner/architect reserves the right to reject the contractor's personnel at any position including personnel of associated with the contractor or with any other subcontractor at which time the contractor must replace them with other qualified personnel.**

8.3.3 The Contractor agrees that neither he nor his subcontractors will discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of age, sex, race, color, religion, national origin or ancestry. Breach of this covenant may be regarded as a material breach of this Contract.

8.3.4 All manufactured articles, materials and equipment shall be supplied, installed, connected, erected, used, cleansed, and conditioned as directed by the manufacturer unless herein specified to the contrary.

8.5.1 Workmanship and installation shall be of the best quality possible. Each part of the work and activity shall be pursued with the best possible workmanship, producing work that is neat, secure, and weatherproof with the best possible appearance and utility.

8.5.2 The Architect will be the judge of all installed work, and may reject work, which does not meet the standards established hereby. Such rejected work shall be repaired or replaced to the satisfaction of the Architect without additional cost to the Owner.

8.6.1 Contractors shall be responsible for informing themselves of tax laws, requirements, regulations and interpretations as they apply to this project.

8.6.2 Unless otherwise specified, the Contract Sum includes all taxes applicable as of the date of the bid opening, and which are applicable to the work. If tax laws are subsequently amended by legislation, equitable net adjustment to the Contract Sum shall be made upon claim by either party involved.

8.6.3 The owner is exempt from the payment of Federal Excise Taxes and State of Ohio Sales or Use Taxes. This exemption applies only to materials incorporated into the Project. Therefore, such taxes shall not be included in the Contract Sum. The Contractor shall obtain copies of the Exemption Certificate as required from the Owner for subsequent issuance to subcontractors and material suppliers.

8.6.4 The above exemption shall not extend to any expendable item purchased for the Project, but not incorporated into the Project.

8.7.1.1 Permits, Fees, Inspections: **The 1A - General Work & Labor Contractor shall obtain the Building Permit and shall be reimbursed by the Owner. All other Contractors, Trades and Subcontractors shall be responsible for their permits, fees, and must be included in their bid. The 1A - General Work & Labor Contractor is responsible for scheduling and obtaining inspections for their portions of the work at the intervals required by the Architect or local Building Officials.**

8.7.1.2 Any Contractor performing work shall be so licensed as required by the State, County, and/or municipality having jurisdiction. Copies of license certificates shall be transmitted to the Owner within 10 days following the endorsement of the Contract.

8.7.1.2.1 Any Subcontractor performing work shall be so licensed as required by the State, County, and/or municipality having jurisdiction. Copies of license certificates shall be transmitted to the Owner within 10 days following the endorsement of the Contract.

8.8.1 Shop drawings and samples shall be dated and marked to show the names of the Project, Architect, Contractor, originating Subcontractor, manufacturer or supplier and separate detailer, if pertinent. Shop drawings shall completely identify Specification Section and locations at which materials or equipment are to be installed. Reproduction of Contract Documents are acceptable as Show Drawings only when specifically authorized in writing by the Architect.

8.12 Indemnification clause. The Contractor agrees, to the fullest extent permitted by law, to indemnify and hold the Owner and Architect harmless from any damage, liability or cost (including reasonable attorneys' fees and costs of defense) to the extent caused by the Contractor negligent acts, errors or omissions in the performance of work described in this Agreement and those of his or her subcontractors or anyone for whom the Contractor is legally liable. As such, the contractor agrees to name both the Owner and Architect to his general liability insurance policy, as an additional insured prior to commencement of any work on this project.

The Owner agrees, to the fullest extent permitted by law, to indemnify and hold the Contractor harmless from any damage, liability, or cost (including reasonable attorneys' fees and cost of defense) to the extent caused by the Owner's negligent acts, errors, or omissions.

8.13 Combination Bids must list all Prime Contractors making up the combination bid.

8.14 In case of a Combination Bid being accepted by the Owner, the awarded Contractor shall use the other Contractors listed in an attachment to the bid form for the work (as outlined above) throughout the entire project unless approval has been received in writing from the Owner through the Architect's office, prior to replacement of a Contractor.

ARTICLE 11 - TIME

11.1.1 A Notice to Proceed will be issued by the Owner. Contractors shall obtain insurance and permits, file documents and notices, as required and necessary, and shall commence the work as soon as notified.

11.2.1 Any claim for extension of time shall be made in writing to the Architect not more than three (3) calendar days after the commencement of the delay; otherwise the claim will be considered waived by the Contractors. A Contractor's written claims for extension of time shall be accompanied by detailed dates, correspondence, notices, and any other data, which provides proof of the events which are the basis for the claim.

11.2.2 Delays due to tardy shop drawing submittals, tardy material ordering, or shipments, or any other delays caused by a supplier or a subcontractor of the Contractor shall not be deemed valid causes for delays of the work and shall not be accepted as a basis for claim for extension of time, as the scheduling and control of suppliers and subcontractors is the Contractor's responsibility. The Architects or his sub-consultants normal review time of any tardy submittals, shall not be cause for a delay claim.

11.2.3 Permitting the Contractor to continue and furnish the work or any part of the work after the date fixed for completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Owner of any of his rights under the Contract.

11.2.4 Preparation of the project schedule has been based on weather norms for this geographic area. Extensions of time because of inclement weather shall be recognized only to the extent they exceed norms for the area as established by the National Weather Service. Evidence of such condition shall be presented by the Contractor with his claim.

11.2.5 Only claims in the amount not exceeding \$50,000 will be Settled by Arbitration or alternative dispute resolution means. All other claims will be settled in a Court of Law with jurisdiction thereof.

ARTICLE 12 - PAYMENTS AND COMPLETION

12.2.1.1 **The Schedule of Values** shall be prepared in such a manner that each major item of work and each subcontracted item of work is shown as a single item of **A.I.A. Document G703 "Application and Certification for Payment, Continuation Sheet"**.

12.2.1.2 The form of **Application for Payment** shall be **A.I.A. Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet**. Applications shall be submitted monthly and shall be notarized. A minimum of five (5) copies shall be submitted to the Architect, with at least one (1) copy of each form being an **original**.

12.4.1.1 Progress payments will be made in the amount of ninety-two percent (92%) of the value of the work completed to date, as approved by the Architect. When the work is fifty percent (50%) complete and requisitions for payment for same have been approved, if the work on the project is satisfactory and proceeding on schedule and upon consent of surety, the Architect may determine that no additional retainage be held. In such instance, the Owner will retain eight percent (8%) of the first fifty percent (50%) of the contract amount until thirty (30) days following the date of substantial completion, at which time all retainage will be paid to the Contractor except such amount as the Architect shall

determine be held until satisfactory completion of the work and settlement of all claims.

12.4.1.2 The full contract retainage may be reinstated if the manner of completion of the work and its progress do not remain satisfactory to the Architect, or if the surety withholds his consent, or for other good and sufficient reasons.

12.4.1.3 From the date the contract is fifty percent (50%) complete, all funds retained for the faithful performance of work by the Contractor shall be deposited in an escrow account by the Owner.

12.4.1.4 The Owner shall make payment, in the amount approved on a Certificate of Payment, within thirty (30) calendar days of receipt of said certificate.

12.4.5 There shall be paid to the Contractor a sum at the rate of ninety-two percent (92%) of the invoice costs, not to exceed the bid price in a unit price contract, of material delivered on the site of the work. The balance of such invoiced value shall be paid when such material is incorporated into and becomes part of such building, construction, addition improvement, alteration or installation.

12.4.5.1 Payments by the Owner for materials stored off-site will not be made unless approved by the Architect after physical verification of the same.

12.4.5.1 All monies paid on account to any Contractor for materials or labor shall be regarded as funds in his trust for payment of any and all obligations relating to the contract and no such amount or monies shall be permitted to accrue to the Contractor until all such obligations are satisfied.

12.6.2.1 Final payment, including all retainage and accumulated interest, will be due the contractor thirty (30) days after the completion and acceptance of all work under the Contract, subject to satisfactory submissions of all documentation required under SECTION 01770 PROJECT CLOSEOUT.

12.7 Liquidated Damages:

12.7.1 The Contractor and his Surety agree to share in the financial losses suffered by the Owner as a result of not meeting the milestones listed in the project schedule. The Owner shall be reimbursed by the Contractor for liquidated damages due to delay in the completion of the work for each calendar day of delay after the specified Milestone dates established by the Project Schedule defined in Section 00300 until such time that the Architect determines the work is substantially complete. The amount of liquidated damages to be assessed is **as indicated in Section 00101, Invitation to Bid.**

12.7.2 In the event the Owner accepts a Combination Bid, liquidated damages will still be assessed for each prime contract listed on the project schedule for each calendar day, for each separate portion of the work, after the specified milestone date established by the Project Schedule in Section 00300 until such time the Architect determines the work is substantially complete. The amounts of liquidated damages to be assessed are **as indicated in Section 00101, Invitation to Bid.**

12.8 Right of Offset

12.8.1 If actions by Contractor damage other work on the project or Owner's property, the Owner may withhold payment in the amount necessary to have proper work completed to restore the project or property to a level of quality existing in rest of project or property. Contractor waives rights to all claims and liens associated with nonpayment due to offset actions by Owner.

ARTICLE 13 PROTECTION OF PERSONS AND PROPERTY

13.1.1 Contractor shall be responsible for providing, erecting, bracing, shoring or in every way protecting his own work in compliance with state and local codes, and all U.S. Occupational Safety and Health Administration (OSHA) regulations. Contractor shall be responsible for the adequacy in performance of his temporary work. Use utmost care to protect the work in progress and, upon removal, protect all surrounding existing work.

13.2 Contractor shall comply with Occupational Safety and Health Act of 1970, as outlined in Federal Register, Volume 36, Number 75, Part II, dated Saturday, April 27, 1971, Department of Labor, Bureau of Labor Standards, Safety and Health Regulations for construction or any revisions of the documents issued by Agencies, and all other applicable codes, laws, regulations, and policies governing work on this project.

13.2.1 Contractor shall plan and perform all work without creating any interruption of the pursuit of normal business. All necessary interruptions must be minimized, planned, programmed and approved by the Owner in advance. Contractor shall include in his bid price the associated costs for premium time, etc. to comply with this requirement.

ARTICLE 15 MISCELLANEOUS PROVISIONS

15.4 Standard Forms and Procedures

15.4.1 Information required to be submitted to the Owner within ten (10) days after the Award of Contract, as specified herein, includes, but is not limited to, the following:

1. Complete equipment, material and subcontract list. The Contractor shall submit a list of the names of the subcontractors proposed for the principal portions of the work. The list shall be submitted either on AIA Document G805 or on the Contractor's letterhead, in which cases, the listing shall identify the work to be done, the firm name, the address, the telephone number and the contact representative for each subcontractor listed. This subcontractor listing shall be submitted within ten days after execution of the contract, and in no case will the first Partial Payment Request be approved until the Architect's office has received a complete list.
2. Insurance certificates.
3. Progress schedule.

15.4.2 Information required before authorization of final payment, as specified herein, includes, but is not limited to, the following:

1. Certification of inspection by concerned government agencies and "permit" set of Contract Documents, if required.
2. Contractor's Affidavit of Payment of Debts and Claims, AIA G706.
3. Contractor's Affidavit of Release of Liens, AIA G706A.
4. Consent of Surety Company to Final Payment, AIA G707.
5. Contractor's letter stating work is complete and requesting final payment.
6. Contractor's one-year guarantee form.
7. Miscellaneous specified guarantees when in excess of one year.
8. Miscellaneous maintenance operating instructions as required and/or specified.
9. Receipts for specified additional materials delivered to the Owner.
10. Certificate of Substantial Completion, AIA G704.

15.5 Existing Site Conditions

15.5.1 Information pertaining to existing locations and configurations of existing structures, utilities and drains within existing buildings and structures, utilities and drains above grade and sub-surface, has all been obtained by the Owner through surveys and investigations, and is shown on the drawings. This information has been gathered with reasonable care but is of a schematic nature and is not guaranteed for accuracy. The Contractor shall verify all information given prior to beginning his work. The Contractor shall make careful investigation to establish the exact location of items indicated on the drawings. The Contractor shall be responsible for all costs arising out of damage to such items, which results from his work.

15.5.2 The Contractor shall be alert to any indication or evidence of concealed utilities or structures not shown on the drawings and shall notify the Architect of such evidence. If the Contractor encounters such utilities or structures, he shall cease operations immediately to minimize damage and shall notify the Architect. The Contractor shall bear the cost of damage resulting from his failure to exercise reasonable care in his work or from continuing operations without notifying the Architect.

15.5.3 Roads and sidewalks used in the progress of this work, both within the limits of the construction site and the adjacent areas leading to it, shall be maintained open to travel and kept in clean condition. Failure to so maintain said

roads and sidewalks, which results in Owner's cleaning of same, shall be charged to the Contractor.

15.5.4 All Contractors bidding on this work are cautioned to visit the sites as a part of the bid requirement and determine all local conditions that may in any way affect their work. Conditions at the construction site and any information reasonably inferable from conditions at the construction site shall be deemed to have been known to the Contractor prior to submission of the bid, and shall not be the basis for a claim or any extra compensation.

ARTICLE 18 INSURANCE AND BONDS

18.1.1 Furnish two copies of each certificate herein required; specifically set forth evidence of all coverage required in SECTION 00620 CERTIFICATE OF INSURANCE.

18.2 Schedule-Insurance

A. Contractor and Subcontractor Insurance

Each Contractor furnishing labor and/or materials shall furnish insurance in the following categories and for the stated minimum amounts. Such insurance shall be for no less than the following limits, but the Owner assumes no responsibility for the adequacy of such limits. The liability insurance required shall be written to include the Owner as additional insured. All insurance shall be written to show evidence of the following:

- (1) Worker's Compensation including Occupational Disease and Employer's Liability Insurance-Statutory. Evidence of said insurance must be filed with the Owner before work can commence.
- (2) Comprehensive General Liability, including coverage for Premises Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad-Form Property Damage including Completed Operations with limits not less than those stated below:
 - (a) BODILY INJURY, INCLUDING PERSONAL INJURY LIABILITY AND PROPERTY DAMAGE:
Each occurrence \$2,000,000.00, Aggregate \$2,000,000.00
- (3) Comprehensive Automobile Liability including long-term leased, non-ownership and hired car coverage, as well as owned vehicles:
 - (a) BODILY INJURY AND PROPERTY DAMAGE
Combined single-limit policy \$1,000,000.00
- (4) The Contractor and each subcontractor shall, at their own expense, be responsible for insuring their own equipment and all materials, tools, and temporary sheds and offices that do not become an integral part of the Project.
- (5) Unemployment Compensation-Statutory.
- (6) Indemnification - all contractors agree to indemnify and save harmless the Owner and Architect as provided for in 3.12.

END OF SECTION 00800

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SECTION 00850 – PREVAILING WAGE RATES

PART I - GENERAL

A. PAYMENT OF PREVAILING WAGE RATES

1. The Contractor shall pay the prevailing wage rates of the Project locality, as issued by the Ohio Department of Commerce, Wage and Hour Bureau to laborers and mechanics performing Work on the Project.
2. The Contractor shall comply with the provisions, duties, obligations, and is subject to the remedies and penalties of Ohio Revised Code (O.R.C.) Chapter 4115.
3. The Contractor shall submit all payroll reports in compliance with the requirements of paragraph 1.4 for all of the employees of the Contractor and of the Contractor's Subcontractors.
4. By executing a Contract, the Contractor certifies that it based its Bid upon the prevailing rates of wages as ascertained by the Ohio Department of Commerce, Wage and Hour Bureau for the Project as provided in O.R.C. Sections 4115.03 through 4115.14, which are inserted in this section.

B. PREVAILING WAGE RATE REVISIONS

1. The Owner shall, within 7 business days after receipt of a notice of a change in the prevailing wage rates, notify the Contractor of the change. The prevailing wage rates are available at the Ohio Department of Commerce's web site: <http://www.com.state.oh.us>.
2. The Contractor shall pay any revised wage rates issued during the term of the Contract at no additional cost to the Owner.

C. PAYROLL SCHEDULE

1. Within 10 days of the date of the Notice to Proceed, the Contractor shall provide the Owner's Prevailing Wage Coordinator a schedule of dates during the term of the Contract on which wages shall be paid to employees of the Project.

PART II - PRODUCTS

A. PAYROLL REPORTS

1. The Contractor shall submit payroll reports with each Contractor Payment Request, which reports shall be certified by the Contractor that the payroll is correct and complete and the wage rates shown are not less than those required by the Contract. The Contractor is responsible for submitting all payroll reports of its Subcontractors.
 - a. Each payroll report shall indicate the period covered and include a list containing the name, address, and social security number of each employee of the Contractor and its Subcontractors paid for the Work.
 - b. Each payroll report shall list the number of hours each employee worked each day on the Project during the reporting period, the total hours each week on the Project, the employee's hourly rate of pay, job classification, fringe benefits, and all deductions from wages and net pay.
 - c. Each payroll report shall list each fringe benefit and state if it is paid as cash to the employee or to a named plan.
 - d. For each employee, each payroll report shall list the employee's gender and ethnicity, classified as Black, Hispanic, Asian Pacific Islanders, American Indians/Alaskan Native, or Non-Minority.

- e. The Contractor and its Subcontractors shall submit apprenticeship agreements for all apprentices utilized on the Project.

B. PREVAILING WAGE NOTIFICATION TO EMPLOYEE

- 1. The Contractor shall submit to the Owner a Prevailing Wage Notification to Employee that is filled out for each employee that is onsite and performs work.

PART III - EXECUTION

A. APPLICATIONS FOR PAYMENT

- 1. Applications for payment may be withheld and payments not made by Owner if Contractor fails to submit payroll reports or other information requested by the Owner's Prevailing Wage Coordinator. No interest shall accrue to the Contractor based on payment not made due to information not provided by the Contractor as required by this Section.

B. Prevailing Wage Determination Cover Letter dated 04/12/2024.

C. Contractor to comply with all requirements of Ohio Revised Code and the cover letter.

D. Instructions for Preparing Certified Payroll Reports

- 1. Contractor to comply with all requirements of the instructions.

Prevailing Wage Determination Cover Letter

County: 
Determination Date: 04/11/2024
Expiration Date: 07/11/2024

THE FOLLOWING PAGES ARE PREVAILING RATES OF WAGES ON PUBLIC IMPROVEMENTS FAIRLY ESTIMATED TO BE MORE THAN THE AMOUNT IN O.R.C. SEC. 4115.03 (b) (1) or (2), AS APPLICABLE.

Section 4115.05 provides, in part: "Where contracts are not awarded or construction undertaken within ninety days from the date of the establishment of the prevailing wages, there shall be a redetermination of the prevailing rate of wages before the contract is awarded." The expiration date of this wage schedule is listed above for your convenience only. This wage determination is not intended as a blanket determination to be used for all projects during this period without prior approval of this Department.

Section 4115.04, Ohio Revised Code provides, in part: "Such schedule of wages shall be attached to and made a part of the specifications for the work, and shall be printed on the bidding blanks where the work is done by contract..."

The contract between the letting authority and the successful bidder shall contain a statement requiring that mechanics and laborers be paid a prevailing rate of wage as required in Section 4115.06, Ohio Revised Code.

The contractor or subcontractor is required to file with the contracting public authority upon completion of the project and prior to final payment therefore an affidavit stating that he has fully complied with Chapter 4115 of the Ohio Revised Code.

The wage rates contained in this schedule are the "Prevailing Wages" as defined by Section 4115.03, Ohio Revised Code (the basic hourly rates plus certain fringe benefits). These rates and fringes shall be a minimum to be paid under a contract regulated by Chapter 4115 of the Ohio Revised Code by contractors and subcontractors. The prevailing wage rates contained in this schedule include the effective dates and wage rates currently on file. In cases where future effective dates are not included in this schedule, modifications to the wage schedule will be furnished to the Prevailing Wage Coordinator appointed by the public authority as soon as prevailing wage rates increases are received by this office.

"There shall be posted in a prominent and accessible place on the site of work a legible statement of the Schedule of Wage Rates specified in the contract to the various classifications of laborers, workmen, and mechanics employed, said statement to remain posted during the life of such contract." Section 4115.07, Ohio Revised Code.

Apprentices will be permitted to work only under a bona fide apprenticeship program if such program exists and if such program is registered with the Ohio Apprenticeship Council.

Section 4115.071 provides that no later than ten days before the first payment of wages is due to any employee of any contractor or subcontractor working on a contract regulated by Chapter 4115, Ohio Revised Code, the contracting public authority shall appoint one of his own employees to act as the prevailing wage coordinator for said contract. The duties of the prevailing wage coordinator are outlined in Section 4115.071 of the Ohio Revised Code.

Section 4115.05 provides for an escalator in the prevailing wage rate. Each time a new rate is established, that rate is required to be paid on all ongoing public improvement projects.

A further requirement of Section 4115.05 of the Ohio Revised Code is: "On the occasion of the first pay date under a contract, the contractor shall furnish each employee not covered by a collective bargaining agreement or understanding between employers and bona fide organizations of Labor with individual written notification of the job classification to which the employee is assigned, the prevailing wage determined to be applicable to that classification, separated into the hourly rate of pay and the fringe payments, and the identity of the prevailing wage Coordinator appointed by the public authority. The contractor or subcontractor shall furnish the same notification to each affected employee every time the job classification of the employee is changed."

Work performed in connection with the installation of modular furniture may be subject to prevailing wage.

THIS PACKET IS NOT TO BE SEPARATED BUT IS TO REMAIN COMPLETE AS IT IS SUBMITTED TO YOU. (Reference guidelines and forms are included in this packet to be helpful in the compliance of the Prevailing Wage law.)

wh1500

Instructions For Preparing Certified Payroll Reports

General:

Contractors and subcontractors are required by law to submit certified payroll reports for work on projects covered by Ohio's Prevailing Wage Law. This form meets the reporting requirements established by Ohio Revised Code Chapter 4115. The use of this form is not mandatory; employers may submit their own forms provided that all of the required information is included. This form may be reproduced, or additional copies obtained from:

Ohio Department of Commerce, Wage and Hour Bureau,
77 South High Street, 22nd Floor
Columbus, Ohio 43215, (614) 644-2239

Certified Payroll Heading:

Employer name and address: Company's full name and address. Indicate if the company is a subcontractor; if so list the name of the General or Prime.

Project: Name and location of the project, including county.

Contracting Public Authority: Name and address of the contracting public authority.

Week Ending: Month, day, and year for last day of reporting period.

Payroll #: Indicates first, second, third, etc. payroll filed by the company for the project.

Page indicator: number of pages included in the report.

Project Number: Determined by the public authority. If there is no number leave blank.

Payroll Information by column:

1. Employee Name, Address and Social Security number: This information must be provided for all employees that perform physical labor on the project. Corporate officers, partners, and salaried employees are considered employees and must be paid the prevailing rate. Individual sole proprietors do not have to pay themselves prevailing rate but must report their hours on the project.
2. Work Class: List classification of work actually performed by employee. If unsure of work classification, consult the Ohio department of Commerce, Wage and Hour Bureau. Employees working more than one classification should have separate line entries for each classification. Indicate what year/level for Apprentices. Be specific when using laborer and operator classifications; for example, Backhoe Operator or Asphalt Laborer.
3. Hours Worked, Day & Date: In the first row of column 3 enter days of pay period example; M T W T H F S S. The second row is for the date that corresponds with each day for the pay period. In the employee information section enter the number of hours worked on the prevailing wage project and which day the hours were worked. Separate rows are labeled for (ST) straight time hours and (OT) overtime hours. All hours worked after 40, must be paid at the appropriate overtime rate.
4. Project Total Hours: Total the hours entered for pay period.
5. Base Rate: Enter actual rate per hour paid to the employee. The overtime hourly rate is time and one-half the base rate listed in the prevailing wage schedule plus fringe benefits at straight time rate. The prevailing wage schedule lists the base rate plus fringe benefit amounts. These amounts added together equal the total prevailing wage rate. Employers must pay this total amount in one of three ways.
 - Total rate may be paid in entirety in the base rate to the employee; in which case, the cash designation will be checked for fringe benefits.
 - Total rate may be paid as listed in prevailing wage rate schedule with total fringe amounts paid approved plans.
 - Total rate may be paid with a combination of base rate and fringe payments to approved plans in amounts other than those listed in schedule.
6. Project Gross: Enter total gross wages earned on the project for straight time and overtime. Project hours X base rate should equal project gross.

7. Fringes: If fringe benefits are paid in the hourly base rate, indicate this by marking the cash space. If fringe benefits are paid to approved plans as listed in the prevailing wage rate schedule, mark the space Approved Plans. If fringe benefits are paid partially in the base rate and partially to approved plans, mark the space Cash & Approved plans. List the hourly amount paid to approved plans for each fringe. If payments are not made on a per hour basis, calculate the hourly fringe credit by dividing the yearly employer contribution by the lesser of: hours actually worked in the year (these must be documented) or 2080. Fringe benefits include: Employer's share of health insurance, life insurance, retirement plan, bonus/profit sharing, sick pay, holiday pay, personal leave, vacation, and education/training programs.
8. Total Hours All Jobs: Total all hours worked during the pay period including non-prevailing wage jobs.
9. Total Gross All Jobs: Gross amount earned in the pay period for all hours worked.
10. Self explanatory.
11. Self explanatory.
12. Self explanatory.

**Affidavit of Compliance
PREVAILING WAGES**

I,

(Name of person signing affidavit)(Title)

do hereby certify that the wages paid to all employees of

(Company Name)

for all hours worked on the

(Project name and location)

project, during the period from _____ to _____ are in
(Project Dates)

compliance with prevailing wage requirements of Chapter 4115 of the Ohio Revised Code.

I further certify that no rebates or deductions have been or will be made, directly or indirectly,
from any wages paid in connection with this project, other than those provided by law.

(Signature of Officer or Agent)

Sworn to and subscribed in my presence this _____ day of
_____, 20 _____.

(Notary Public)

The above affidavit must be executed and sworn to by the officer or agent of the contractor or subcontractor who supervises the payment of employees. This affidavit must be submitted to the owner (public authority) before the surety is released or final payment due under the terms of the contract is made.

Prevailing Wage Rate Skilled Crafts

Name of Union: Asbestos Local 207 OH

Change # : LCN01-2018fbLoc207OH

Craft : Asbestos Worker Effective Date : 08/23/2018 Last Posted : 08/23/2018

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Asbestos Abatement	\$25.50	\$7.25	\$6.45	\$0.65	\$0.00	\$0.00	\$0.07	\$0.00	\$0.00	\$39.92	\$52.67
Trainee	\$16.50	\$7.25	\$1.50	\$0.65	\$0.00	\$0.00	\$0.07	\$0.00	\$0.00	\$25.97	\$34.22

Special Calculation Note :

Ratio :

3 Journeymen to 1 Trainee

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA*, ATHENS, AUGLAIZE, BROWN, BUTLER*, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARDIN, HARRISON, HIGHLAND, HOCKING, HOLMES, HURON, KNOX, LAKE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MIAMI, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PORTAGE, PREBLE, RICHLAND, ROSS, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN*, WAYNE

Special Jurisdictional Note : Butler County:(townships of Fairfield,Hanover,Liberty,Milford,Morgan,Oxford,Ripley,Ross,StClair,Union & Wayne.) (Lemon & Madison) Warren County: (townships of: Deerfield, Hamilton, Harlan, Salem, Union & Washington). (Clear Creek, Franklin, Mossie, Turtle Creek & Wayney). Ashtabula County: (post offices & townships of Ashtabula, Austinburg, Geneva, Harperfield, Jefferson, Plymouth & Saybrook) (townships of Andover, Cherry Valley, Colbrook, Canneaut, Denmark, Dorset, East Orwell, Hartsgrrove, Kingville, Lenox, Monroe,Morgan,New Lyme,North Kingsville, Orwell, Pierpoint, Richmond Rock Creek, Rome, Sheffield, Trumbull, Wayne, Williamsfield & Windsor) Erie County:(post offices & townships of Berlin, Berlin Heights,Birmingham,Florence ,Huron, Milan, Shinrock & Vermilion)

Details :

Asbestos & lead paint abatement including,but not limited to the removal or encapsulation of asbestos & lead paint,all work in conjunction with the preparation of the removal of same & all work in conjunction with the

clean up after said removal. The removal of all insulation materials, whether they contain asbestos or not, from mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) is recognized as being the exclusive work of the Asbestos Abatement Workers.

On all mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) that are going to be demolished, the removal of all insulating materials whether they contain asbestos or not shall be the exclusive work of the Laborers.

An Abatement Journeyman is anyone who has more than 300 hours in the Asbestos Abatement field.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 639

Change # : LCNO1-2015fbLoc639

Craft : Painter Effective Date : 06/10/2015 Last Posted : 06/10/2015

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Metal Finisher/Helpers											
Top Helper Class A	\$19.09	\$3.65	\$0.00	\$0.00	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$23.40	\$32.94
Top Helper Class B	\$19.09	\$3.65	\$0.65	\$0.00	\$1.03	\$0.00	\$0.37	\$0.00	\$0.00	\$24.79	\$34.33
Top Helper Class C	\$19.09	\$3.65	\$1.00	\$0.00	\$1.76	\$0.00	\$0.37	\$0.00	\$0.00	\$25.87	\$35.41
Helper Class A	\$14.69	\$3.65	\$0.00	\$0.00	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$18.85	\$26.19
Helper Class B	\$14.69	\$3.65	\$0.65	\$0.00	\$0.79	\$0.00	\$0.28	\$0.00	\$0.00	\$20.06	\$27.40
Helper Class C	\$14.69	\$3.65	\$1.00	\$0.00	\$1.64	\$0.00	\$0.28	\$0.00	\$0.00	\$21.26	\$28.60
New Hire 90 Days	\$11.00	\$3.65	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14.65	\$20.15

Special Calculation Note : Other is Sick and Personal Time

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY,

SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Top Helper: Shall perform the responsibilities of a Helper and be responsible for the setup, break down, safety and quality of the company's product.

Helper : Shall be responsible for performing tasks in refinishing, compliance with safety procedures, setting up and breaking down job sites, scaffolding and swing stages and preparing surfaces for refinishing including but not limited to, masking and stripping and cleaning, oxidizing, polishing and scratch removal on various surfaces

Class A Workers: Less than 1 Year of Service.

Class B Workers: More than 1 and less than 8 Years of Service.

Class C Workers: More than 8 Years of Service.

Metal Polisher Scope of Work: Polishing, buffing, stripping, coloring, lacquering, spraying, cleaning and maintenance of ornamental and architectural metals, iron, bronze, nickel, aluminum and stainless steel and in mental specialty work, various stone finishes, stone specialty work and any other work pertaining to the finishing of metal, stones, woods, and any window washing/cleaning done in conjunction with this work, using chemicals, solvents, coatings and hand applied lacquer thinner, removing scratches from mirror finished metals, burnishing of bronze, statuary finishes on exterior and interior surfaces and the use of all tools required to perform such work, including but not limited to polishes, spray equipment and scaffolding.

Swing State Rate: All work on scaffold 4 sections or higher, including any boom lifts and swing stage scaffolds including the rigging and derigging of hanging/suspended swing stage systems and rappelling/bolson chair work, ADD \$1.50 per hour.

Prevailing Wage Rate Skilled Crafts

Name of Union: Asbestos Local 50 Zone 2

Change # : LCN01-2024ibAsbLoc50Zone2

Craft : Asbestos Worker Effective Date : 03/06/2024 Last Posted : 03/06/2024

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Asbestos Insulation Mechanic	\$33.75		\$9.20	\$8.35	\$0.50	\$0.00	\$3.75	\$0.10	\$0.00	\$0.00	\$55.65	\$72.52
Firestop Technician	\$33.75		\$9.20	\$8.35	\$0.50	\$0.00	\$3.75	\$0.10	\$0.00	\$0.00	\$55.65	\$72.52
Apprentice	Percent											
1st year	57.12	\$19.28	\$8.96	\$0.00	\$0.44	\$0.00	\$0.50	\$0.10	\$0.00	\$0.00	\$29.28	\$38.92
2nd year	69.48	\$23.45	\$9.20	\$0.95	\$0.44	\$0.00	\$0.85	\$0.10	\$0.00	\$0.00	\$34.99	\$46.71
3rd year	80.94	\$27.32	\$9.20	\$2.38	\$0.44	\$0.00	\$1.25	\$0.10	\$0.00	\$0.00	\$40.69	\$54.35
4th year	88.68	\$29.93	\$9.20	\$2.38	\$0.44	\$0.00	\$1.50	\$0.10	\$0.00	\$0.00	\$43.55	\$58.51

Special Calculation Note : *other is labor mgt training fund

Ratio :

1 Journeyman to 1 Apprentice
4 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE

Special Jurisdictional Note : In Butler County the following townships are included: (Lemon Twp, Madison Twp) In Warren County the following townships are included: (Clear Creek Twp, Franklin Twp, Massie Twp, Turtle Creek Twp, Wayne Twp)

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: **Boilermaker Local 105**

Change # : LCN02-2013fbLoc 105

Craft : Boilermaker Effective Date : 10/01/2013 Last Posted : 09/25/2013

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Boilermaker	\$35.26		\$7.07	\$13.28	\$0.89	\$0.00	\$3.00	\$0.55	\$0.00	\$0.00	\$60.05	\$77.68
Apprentice	Percent											
1st 6 months	70.03	\$24.69	\$7.07	\$11.30	\$0.89	\$0.00	\$2.10	\$0.55	\$0.00	\$0.00	\$46.60	\$58.95
2nd 6 months	75.02	\$26.45	\$7.07	\$11.30	\$0.89	\$0.00	\$2.25	\$0.55	\$0.00	\$0.00	\$48.51	\$61.74
3rd 6 months	80.00	\$28.21	\$7.07	\$11.30	\$0.89	\$0.00	\$2.40	\$0.55	\$0.00	\$0.00	\$50.42	\$64.52
4th 6 months	85.02	\$29.98	\$7.07	\$11.30	\$0.89	\$0.00	\$2.55	\$0.55	\$0.00	\$0.00	\$52.34	\$67.33
5th 6 months	87.52	\$30.86	\$7.07	\$13.28	\$0.89	\$0.00	\$2.63	\$0.55	\$0.00	\$0.00	\$55.28	\$70.71
6th 6 months	90.03	\$31.74	\$7.07	\$13.28	\$0.89	\$0.00	\$2.70	\$0.55	\$0.00	\$0.00	\$56.23	\$72.11
7th 6 months	92.50	\$32.62	\$7.07	\$13.28	\$0.89	\$0.00	\$2.78	\$0.55	\$0.00	\$0.00	\$57.19	\$73.49
8th 6 months	95.00	\$33.50	\$7.07	\$13.28	\$0.89	\$0.00	\$2.85	\$0.55	\$0.00	\$0.00	\$58.14	\$74.89

Special Calculation Note : Other is Supplemental Health and Welfare

Ratio :

5 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GREENE, GUERNSEY, HAMILTON, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING, MADISON, MEIGS, MIAMI, MONTGOMERY, MORGAN, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PREBLE, ROSS, SCIOTO, VINTON, WARREN

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 Heavy Hwy (A)

Change # : LCN01-2023ibLoc23HevHwyA

Craft : Bricklayer Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason Bricklayer Sewer Water Works A	\$32.40		\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.70	\$67.90
Apprentice	Percent											
1st year	70.00	\$22.68	\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.98	\$53.32
2nd year	80.00	\$25.92	\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.22	\$58.18
3rd year	90.00	\$29.16	\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.46	\$63.04

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

- 3 Journeymen to 1 Apprentice
- 6 Journeymen to 2 Apprentice
- 9 Journeymen to 3 Apprentice
- 12 Journeymen to 4 Apprentice
- 15 Journeymen to 5 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

- ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

(B) Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control,Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 Heavy Hwy (B)

Change # : LCN01-2023ibLoc23HevHwyB

Craft : Bricklayer Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason Bricklayer Power Plants Tunnels Amusement Parks B	\$33.39		\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.70	\$69.39
Apprentice	Percent											
1st year	70.00	\$23.37	\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.68	\$54.37
2nd year	80.00	\$26.71	\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.02	\$59.38
3rd year	90.00	\$30.05	\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.36	\$64.39

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

- 3 Journeymen to 1 Apprentice
- 6 Journeymen to 2 Apprentice
- 9 Journeymen to 2 Apprentice
- 12 Journeymen to 4 Apprentice
- 15 Journeymen to 5 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

- ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT,

TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

(B) Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control,Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

First 90 Days	45.00	\$12.06	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12.06	\$18.09
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Special Calculation Note : Classification title contains "Bricklayer" because contract originates within the Bricklayer Local.

Note that the classification description is clarified after the local union number at the top of the page.

Medical Savings Account: The Medical Savings Account can only be deducted providing employee shows proof voluntary enrollment in the program. Minimum contribution of \$1.00 per hourworked with no maximum.

Ratio :

1 Journeyman 1 Apprentice
5 Journeyman 1 Apprentice
10 Journeyman 2 Apprentice
15Journeyman 3 Apprentice
20 Journeyman 4 Apprentice
25 Journeyman 5 Apprentice
8 Employees 1 Helper

Jurisdiction (* denotes special jurisdictional note) :

AUGLAIZE, CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, HARDIN, HIGHLAND, LOGAN, MERCER, MIAMI, MONTGOMERY, PREBLE*, SHELBY

Special Jurisdictional Note : In Preble County the following townships are included: (Jackson, Monroe, Harrison, Twin and Washington)

Details :

Tile Layer Finishers shall do mixing of mortars & adhesives, cleaning & grouting of tile, unloading of all trucks, unpacking & handling of all tile & materials such as sand, lime, cement, tile, & all types of tile panels, prefabricated on job site. Marble Setter Finishers shall do all cleaning, waxing & polishing, grouting and pointing.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Dayton Tile Mechanic)

Change # : LCN01-2023ibLoc23DaytonTM

Craft : Bricklayer Effective Date : 07/05/2023 Last Posted : 07/05/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Tile Marble Terrazzo Mechanics	\$30.00		\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.30	\$60.30
Terrazzo Worker	\$30.00		\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.30	\$60.30
Apprentice	Percent											
1st 6 Months	60.00	\$18.00	\$8.31	\$0.00	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.86	\$35.86
2nd 6 Months	65.00	\$19.50	\$8.31	\$0.00	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.36	\$38.11
3rd 6 Months	70.00	\$21.00	\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.30	\$46.80
4th 6 Months	75.00	\$22.50	\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.80	\$49.05
5th 6 months	80.00	\$24.00	\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.30	\$51.30
6th 6 months	85.00	\$25.50	\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.80	\$53.55
7th 6 months	90.00	\$27.00	\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.30	\$55.80
8th 6 months	95.00	\$28.50	\$8.31	\$6.44	\$0.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.80	\$58.05

Special Calculation Note : Classification title contains "Bricklayer" because contract originates within the Bricklayer Local.

Note that the classification description is clarified after the local union number at the top of the page.

Ratio :

- 5 Journeymen to 1 Apprentice
- 10 Journeymen to 2 Apprentice
- 15 Journeymen to 3 Apprentice
- 20 Journeymen to 4 Apprentice
- 25 Journeymen to 5 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

- CHAMPAIGN, CLARK, CLINTON, DARKE,
- GREENE, HIGHLAND, LOGAN, MIAMI,
- MONTGOMERY, PREBLE*, SHELBY

Special Jurisdictional Note : In Preble County the following townships are included: (Jackson, Jefferson, Monroe, Harrison, Twin and Washington)

Details :

** (Tile layers work) the laying, cutting or setting of all tile where used for floors, walls, ceilings, walks, promenade roofs, stair treads, stair risers, facings, hearths, fireplaces & decorative inserts together with any marble plinths, thresholds or window stools used in connection with any tile work. the building, shaping forming construction or repairing of all fireplace work, whether in connection with a mantel hearth facing or not, & the setting & preparing of all material such as cement, plaster, mortar, brickwork, iron work or other materials necessary for the proper, safe construction & completion of such work: except that a mantel made exclusively of brick, marble or stone shall be conceded to be bricklayers, marble setters or stonemasons' work respectively.

** Marble, mosaic, venetian enamel & terrazzo. Cutting and assembling of mosaics. all rolling of terrazzo work.

** Caulking of all expansion, perimeter & angle joints shall be the exclusive work of the tile mechanic.

** Marble masons shall consist of carving, cutting & setting of all marble, slate (including blackboards) stone, albereen, carrara, sanionyx, vitrolite & similar opaque glass, scagliola, what ever thickness or dimension.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Dayton)

Change # : LCN01-2023ibLoc23Dayton

Craft : Bricklayer Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Stone Mason Refractory	\$31.78		\$9.25	\$7.19	\$0.59	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.70
Pointer/Caulker/Cleaner	\$31.78		\$9.25	\$7.19	\$0.59	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.70
Improver Apprentices 25 day probationary period then												
1st 6 months	\$20.66		\$9.25	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.40	\$40.73
2nd 6 months	\$23.84		\$9.25	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.58	\$45.50
3rd 6 months	\$27.01		\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.64	\$56.15
4th 6 months	\$30.19		\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.82	\$60.92
Bricklayer Stone Mason Refractory and PCC Apprentice	Percent											
1st 6 months	60.00	\$19.07	\$9.25	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.81	\$38.34
2nd 6 months	65.00	\$20.66	\$9.25	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.40	\$40.73
3rd 6 months	70.02	\$22.25	\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.88	\$49.01
4th 6 months	75.00	\$23.83	\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.47	\$51.38
5th 6 months	80.00	\$25.42	\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.05	\$53.77
6th 6 months	85.00	\$27.01	\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.64	\$56.15
7th 6 months	90.00	\$28.60	\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.23	\$58.53
8th 6 months	95.00	\$30.19	\$9.25	\$5.89	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.82	\$60.92
Mason Trainee-1-90 Days	45.00	\$14.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14.30	\$21.45
91-365 Days	45.00	\$14.30	\$9.25	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.55	\$30.70
2nd Year	50.00	\$15.89	\$9.25	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.14	\$33.09

Special Calculation Note : Classification title contains "Bricklayer" because contract originates within the Bricklayer Local.

Note that the classification description is clarified after the local union number at the top of the page. Apprentice and Apprentice Improver, Health and Welfare after 30 days. Mason Trainees Health and

Welfare after 90 days.

Ratio :

Bricklayer Stone Mason Refractory Worker:
1-2 Journeymen to 1 Apprentice
3-4 Journeymen to 2 Apprentice
5-6 Journeymen to 2 Apprentice
7-10 Journeymen to 3 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, CLINTON, DARKE,
GREENE, HIGHLAND, LOGAN, MIAMI,
MONTGOMERY, PREBLE*, SHELBY

Mason Trainee Ratio:

1 Apprentice permits 1 Mason Trainee
2 Apprentice permits 1 Mason Trainee
3 Apprentice permits 2 Mason Trainee
4 Apprentice permits 2 Mason Trainee

In order to utilize a Pre-Apprentice, you must have 1 registered apprentice in your employ.

Ratio of Improver Apprentices to Journeymen in no case shall their be no more than 1 Improver Apprentice to 6 Journeymen

Special Jurisdictional Note : In Preble County the following townships are included: Jackson, Monroe, Harrison, Twin, Jefferson and Washington

Details :

Apprentice Ratio's covers: Bricklayer, Stone Mason, Refractory worker and Pointer, Cleaner, Caulker.

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Floorlayer SW District G

Change # : LCN01-2023ibLocSWG

Craft : Carpenter Effective Date : 09/20/2023 Last Posted : 09/20/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Floorlayer	\$29.02		\$8.31	\$6.95	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$47.31	\$61.82
Apprentice	Percent											
1st 3 months	65.00	\$18.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.86	\$28.29
2nd 3 months	65.00	\$18.86	\$8.31	\$0.00	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$30.20	\$39.63
2nd 6 months	65.00	\$18.86	\$8.31	\$0.00	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$30.20	\$39.63
3rd 6 months	70.00	\$20.31	\$8.31	\$0.00	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$31.65	\$41.81
4th 6 months	75.00	\$21.76	\$8.31	\$0.00	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$33.11	\$43.99
5th 6 months	80.00	\$23.22	\$8.31	\$6.95	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$41.51	\$53.11
6th 6 months	85.00	\$24.67	\$8.31	\$6.95	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$42.96	\$55.29
7th 6 months	90.00	\$26.12	\$8.31	\$6.95	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$44.41	\$57.47
8th 6 months	95.00	\$27.57	\$8.31	\$6.95	\$0.60	\$0.00	\$2.28	\$0.15	\$0.00	\$0.00	\$45.86	\$59.64

Special Calculation Note : Other fs for UBC National Fund and Install

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, DARKE, GREENE, HAMILTON, LOGAN, MIAMI, MONTGOMERY, PREBLE, SHELBY, WARREN

Special Jurisdictional Note :

Details :

Scope of work shall include, but not be limited to: receiving,unloading,handling,distribution and installation of all carpeting materials,carpet padding or matting materials and all resilient materials whether for use on walls,

floors, counter, sink, table and all preparation work necessary in connection therewith, including sanding work. the installation of nonstructural under-layment and the work of removing, cleaning waxing of any of the above. Carpeting shall include any floor covering composed of either natural or synthetic fibers that are made in breadths to be sewed, fastened or directly glued to floors or over cushioning sound-proofing materials. Resilient Floors shall consist of and include the laying of all special designs of wood, wood block, wood composition, cork, linoleum, asphalt, mastic, plastic, rubber tile, whether nailed or glued.

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Millwright Local 1090 SW Zone II

Change # : LCN01-2023ibLoc1090SW2

Craft : Carpenter Effective Date : 09/20/2023 Last Posted : 09/20/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Millwright	\$33.50		\$8.13	\$6.95	\$0.62	\$0.00	\$7.47	\$0.18	\$0.00	\$0.00	\$56.85	\$73.60
Apprentice	Percent											
1st 6 months	60.00	\$20.10	\$8.13	\$4.27	\$0.62	\$0.00	\$4.48	\$0.18	\$0.00	\$0.00	\$37.78	\$47.83
2nd 6 months	65.00	\$21.78	\$8.13	\$4.61	\$0.62	\$0.00	\$4.86	\$0.18	\$0.00	\$0.00	\$40.17	\$51.06
3rd 6 months	70.00	\$23.45	\$8.13	\$4.94	\$0.62	\$0.00	\$5.23	\$0.18	\$0.00	\$0.00	\$42.55	\$54.28
4th 6 months	75.00	\$25.12	\$8.13	\$5.28	\$0.62	\$0.00	\$5.60	\$0.18	\$0.00	\$0.00	\$44.94	\$57.50
5th 6 months	80.00	\$26.80	\$8.13	\$5.61	\$0.62	\$0.00	\$5.98	\$0.18	\$0.00	\$0.00	\$47.32	\$60.72
6th 6 months	85.00	\$28.47	\$8.13	\$5.95	\$0.62	\$0.00	\$6.35	\$0.18	\$0.00	\$0.00	\$49.71	\$63.94
7th 6 months	90.00	\$30.15	\$8.13	\$6.28	\$0.62	\$0.00	\$6.72	\$0.18	\$0.00	\$0.00	\$52.08	\$67.16
8th 6 months	95.00	\$31.82	\$8.13	\$6.62	\$0.62	\$0.00	\$7.10	\$0.18	\$0.00	\$0.00	\$54.47	\$70.39

Special Calculation Note : Other (\$0.18) \$0.13 National Fund and \$0.05 for National Millwright Fund.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, DARKE, GREENE, LOGAN, MIAMI, MONTGOMERY, PREBLE, SHELBY

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter NE District Industrial Dock & Door

Change # : LCN01-2014fbCarpNEStatewide

Craft : Carpenter Effective Date : 03/05/2014 Last Posted : 03/05/2014

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter	\$19.70		\$5.05	\$1.00	\$0.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.90	\$35.75
Trainee	Percent											
1st Year	60.00	\$11.82	\$5.05	\$1.00	\$0.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.02	\$23.93
2nd Year	80.20	\$15.80	\$5.05	\$1.00	\$0.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.00	\$29.90

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 Journeymen to 1 Trainee

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note : Industrial Dock and Door is the installation of overhead doors, roll up doors and dock leveling equipment

Details :

10/27/10 New Contract jc

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter & Pile Driver
SW Zone 1

Change # : LCN01-2023ibLoc136SWZone1

Craft : Carpenter Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter	\$30.22		\$8.00	\$6.95	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$48.52	\$63.63
Pile Driver	\$30.22		\$8.00	\$6.95	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$48.52	\$63.63
Apprentice	Percent											
1st 3 Months	60.00	\$18.13	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.13	\$27.20
2nd 3 Months	60.00	\$18.13	\$8.00	\$0.00	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$29.48	\$38.55
2rd 6 Months	60.00	\$18.13	\$8.00	\$0.00	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$29.48	\$38.55
3th 6 Months	65.00	\$19.64	\$8.00	\$0.00	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$30.99	\$40.81
4th 6 Months	65.00	\$19.64	\$8.00	\$0.00	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$30.99	\$40.81
5th 6 Months	70.00	\$21.15	\$8.00	\$6.95	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$39.45	\$50.03
6th 6 Months	75.00	\$22.66	\$8.00	\$6.95	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$40.97	\$52.30
7th 6 Months	80.00	\$24.18	\$8.00	\$6.95	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$42.48	\$54.56
8th 6 Months	85.02	\$25.69	\$8.00	\$6.95	\$0.60	\$0.00	\$2.60	\$0.15	\$0.00	\$0.00	\$43.99	\$56.84

Special Calculation Note : Other is for UBC National Fund

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, DARKE, GREENE, LOGAN, MIAMI, MONTGOMERY, PREBLE, SHELBY

Special Jurisdictional Note :

Details :

Carpenter duties shall include but not limited to: Pile driving, milling, fashioning, joining, assembling, erecting, fastening, or dismantling of all material of

wood, plastic, metal, fiber, cork, and composition, and all other substitute materials: pile driving, cutting, fitting, and placing of lagging, and the handling, cleaning, erecting, installing, and dismantling of machinery, equipment, and erecting pre-engineered metal buildings.

Pile Drivers work but not limited to: unloading, assembling, erection, repairs, operation, signaling, dismantling, and reloading all equipment that is used for pile driving including pile butts. pile butts is defined as sheeting or scrap piling. Underwater work that may be required in connection with the installation of piling. The diver and his tender work as a team and shall arrive at their own financial arrangements with the contractor. Any configuration of wood, steel, concrete, or composite that is jettied, driven, or vibrated onto the ground by conventional pile driving equipment for the purpose of supporting a future load that may be permanent or temporary.

Driving bracing, plumbing, cutting off and capping of all piling whether wood, metal, pipe piling or composite. loading, unloading, erecting, framing, dismantling, moving, and handling of pile driving equipment. piling used in the construction and repair of all wharves, docks, piers, trestles, caissons, cofferdams, and the erection of all sea walls and breakwaters. All underwater and marine work on bulkheads, wharves, docks, shipyards, caissons, piers, bridges, pipeline work, viaducts, marine cable and trestles, as well as salvage and reclamation work where divers are employed.

Rate shall include carpenters, acoustic, and ceiling installers, drywall installers, pile drivers, and floorlayers.

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter & Pile Driver SW District HevHwy

Change # : LCN01-2023ibCarpSWHevHwy

Craft : Carpenter Effective Date : 05/03/2023 Last Posted : 05/03/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Journeyman	\$33.28		\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$53.99	\$70.63
Apprentice	Percent											
1st 6 Months	60.00	\$19.97	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$40.68	\$50.66
2nd 6 Months	65.00	\$21.63	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$42.34	\$53.16
3rd 6 Months	70.00	\$23.30	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$44.01	\$55.65
4th 6 Months	75.00	\$24.96	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$45.67	\$58.15
5th 6 Months	80.00	\$26.62	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$47.33	\$60.65
6th 6 Months	85.00	\$28.29	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$49.00	\$63.14
7th 6 Months	90.00	\$29.95	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$50.66	\$65.64
8th 6 Months	95.00	\$31.62	\$8.44	\$6.95	\$0.60	\$0.00	\$4.57	\$0.15	\$0.00	\$0.00	\$52.33	\$68.13

Special Calculation Note : Other is UBC National Fund.

Ratio :

1 Journeymen to 1 Apprentice

An employer shall have the right to employ one (1) Apprentice for one (1) Journeyman Carpenter in its employment for the first Apprentice employed, and 1 (1) Apprentice for two (2) Journeyman Carpenter for additional Apprentices employed.

Thereafter, every third additional carpenter hired shall be an apprentice, if available, and if practical for the type of work being performed.

Jurisdiction (* denotes special jurisdictional note) :

BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, DARKE, GREENE, HAMILTON, LOGAN, MIAMI, MONTGOMERY, PREBLE, SHELBY, WARREN

Special Jurisdictional Note :

Details :

Highway Construction, Airport Construction, Heavy Construction but not limited to:(tunnels,subways,drainage projects,flood control,reservoirs). Railroad Construction,Sewer Waterworks & Utility Construction but not limited to: (storm sewers, waterlines, gaslines). Industrial & Building Site, Power Plant, Amusement Park, Athletic Stadium Site, Sewer and Water Plants.

When the Contractor furnishes the necessary underwater gear for the Diver, the Diver shall be paid one and one half (1&1/2) times the journeyman rate for the time spent in the water.

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason Local 132 (Dayton)

Change # : LCN01-2023ibLoc132

Craft : Cement Effective Date : 06/01/2023 Last Posted : 05/31/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$28.32		\$8.05	\$7.35	\$0.85	\$0.00	\$2.35	\$0.06	\$0.00	\$0.00	\$46.98	\$61.14
Apprentice	Percent											
1st Six Months	70.00	\$19.82	\$8.05	\$7.35	\$0.85	\$0.00	\$2.35	\$0.06	\$0.00	\$0.00	\$38.48	\$48.40
2nd Six Months	80.00	\$22.66	\$8.05	\$7.35	\$0.85	\$0.00	\$2.35	\$0.06	\$0.00	\$0.00	\$41.32	\$52.64
3rd Six Months	90.00	\$25.49	\$8.05	\$7.35	\$0.85	\$0.00	\$2.35	\$0.06	\$0.00	\$0.00	\$44.15	\$56.89

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time. *Other is International Training

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE, SHELBY

Special Jurisdictional Note :

Details :

Other: Is Industry Promotion: Cement Masons on outrigger, swing, scaffolds, manlifts -\$.75 per hour above scale up to (25) feet and \$.75 per hour for each additional (25) feet or part of same. A Cement Mason operating a grinder- \$.30 per hour above the journeyman scale.

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason Statewide HevHwy

Change # : LCN01-2023ibCementHevHwy

Craft : Cement Mason Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$33.74		\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$52.76	\$69.63
Apprentice	Percent											
1st Year	70.00	\$23.62	\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$42.64	\$54.45
2nd Year	80.00	\$26.99	\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$46.01	\$59.51
3rd Year	90.00	\$30.37	\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$49.39	\$64.57

Special Calculation Note : Other \$0.07 is for International Training Fund

Ratio :

1 Journeymen to 1 Apprentice
2 to 1 thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA*,
ATHENS, AUGLAIZE, BELMONT, BROWN,
BUTLER, CARROLL, CHAMPAIGN, CLARK,
CLERMONT, CLINTON, COLUMBIANA,
COSHOCOTON, CRAWFORD, CUYAHOGA*,
DARKE, DEFIANCE, DELAWARE, ERIE,
FAIRFIELD, FAYETTE, FRANKLIN, FULTON*,
GALLIA, GEAUGA*, GREENE, GUERNSEY,
HAMILTON, HANCOCK*, HARDIN, HARRISON,
HENRY*, HIGHLAND, HOCKING, HOLMES,
HURON, JACKSON, JEFFERSON, KNOX, LAKE*,
LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS*, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM*, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD*, WYANDOT

Special Jurisdictional Note : (A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site, Heavy

Construction, Airport Construction Or Railroad Construction Work, Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facilities Construction.

*For Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facility Construction work in the following Counties: Ashtabula, Cuyahoga, Fulton, Geauga, Hancock, Henry, Lake, Lucas, Putnam and Wood Counties, those counties will use the Cement Mason Statewide Heavy Highway Exhibit B District 1 Wage Rate.

Details :

This rate replaces the previous Cement Mason Heavy Highway Statewide Rates (Exhibit A and Exhibit B rates), except for Cement Mason Statewide Heavy Highway Exhibit B Dist 1. sks

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 71 DOT Traffic Signal Highway Lighting American Line Builders

Change # : LCN01-2024ibLoc71DOTClev

Craft : Lineman **Effective Date :** 02/07/2024 **Last Posted :** 02/07/2024

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$44.52	\$7.25	\$1.34	\$0.45	\$0.00	\$8.90	\$0.50	\$0.00	\$0.00	\$62.96	\$85.22
Traffic Signal & Lighting Journeyman	\$42.93	\$7.25	\$1.29	\$0.42	\$0.00	\$8.59	\$0.50	\$0.00	\$0.00	\$60.98	\$82.45
Equipment Operator	\$39.11	\$7.25	\$1.17	\$0.39	\$0.00	\$7.82	\$0.50	\$0.00	\$0.00	\$56.24	\$75.79
Groundman 0 to 12 months (W/O CDL)	\$23.71	\$7.25	\$0.71	\$0.24	\$0.00	\$4.74	\$0.50	\$0.00	\$0.00	\$37.15	\$49.01
Groundman 0 to 12 Months (W CDL)	\$25.90	\$7.25	\$0.77	\$0.26	\$0.00	\$5.18	\$0.50	\$0.00	\$0.00	\$39.86	\$52.81
Groundman greater than 1 year (W CDL)	\$28.11	\$7.25	\$0.84	\$0.28	\$0.00	\$5.62	\$0.50	\$0.00	\$0.00	\$42.60	\$56.66
Traffic Apprentice											
1st 1000 hrs	\$25.76	\$7.25	\$0.77	\$0.26	\$0.00	\$5.15	\$0.50	\$0.00	\$0.00	\$39.69	\$52.57
2nd 1000 hrs	\$27.90	\$7.25	\$0.84	\$0.28	\$0.00	\$5.58	\$0.50	\$0.00	\$0.00	\$42.35	\$56.30
3rd 1000 hrs	\$30.05	\$7.25	\$0.90	\$0.30	\$0.00	\$6.01	\$0.50	\$0.00	\$0.00	\$45.01	\$60.03
4th 1000 hrs	\$32.20	\$7.25	\$0.97	\$0.32	\$0.00	\$6.44	\$0.50	\$0.00	\$0.00	\$47.68	\$63.78
5th 1000 hrs	\$34.34	\$7.25	\$1.03	\$0.34	\$0.00	\$6.87	\$0.50	\$0.00	\$0.00	\$50.33	\$67.50
6th 1000 hrs	\$38.64	\$7.25	\$1.16	\$0.39	\$0.00	\$7.73	\$0.50	\$0.00	\$0.00	\$55.67	\$74.99

Lineman Apprentice	Percent											
	1st 1,000 Hours	60.00	\$26.71	\$7.25	\$0.80	\$0.27	\$0.00	\$5.34	\$0.50	\$0.00	\$0.00	\$40.87
2nd 1,000 Hours	65.00	\$28.94	\$7.25	\$0.87	\$0.29	\$0.00	\$5.79	\$0.50	\$0.00	\$0.00	\$43.64	\$58.11
3rd 1,000 Hours	70.00	\$31.16	\$7.25	\$0.93	\$0.31	\$0.00	\$6.23	\$0.50	\$0.00	\$0.00	\$46.38	\$61.97
4th 1,000 Hours	75.00	\$33.39	\$7.25	\$1.00	\$0.33	\$0.00	\$6.68	\$0.50	\$0.00	\$0.00	\$49.15	\$65.84
5th 1,000 Hours	80.00	\$35.62	\$7.25	\$1.07	\$0.36	\$0.00	\$7.12	\$0.50	\$0.00	\$0.00	\$51.92	\$69.72
6th 1,000 Hours	85.00	\$37.84	\$7.25	\$1.14	\$0.38	\$0.00	\$7.57	\$0.50	\$0.00	\$0.00	\$54.68	\$73.60
7th 1,000 Hours	90.00	\$40.07	\$7.25	\$1.20	\$0.40	\$0.00	\$8.01	\$0.50	\$0.00	\$0.00	\$57.43	\$77.46

Special Calculation Note : Other is Health Reimbursement Account

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

AUGLAIZE, CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, LOGAN, MERCER, MIAMI, MONTGOMERY, PREBLE, SHELBY

Special Jurisdictional Note :

Details :

A groundman when directed shall assist a Journeymen in the performance of his/her work on the ground, including the use of hand tools. Under no circumstances shall this classification climb poles, towers, ladders, or work from an elevated platform or bucket truck. This classification shall not perform work normally assigned to an apprentice lineman. No more than three (3) Groundmen shall work alone. Jobs with more that three Groundmen shall be supervised by a Groundcrew Foreman, Journeyman Lineman, Journeyman Traffic Signal Technician or an Equipment Operator.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 71 High Tension Pipe Type Cable

Change # : LCN01-2024ibLoc71HighTension

Craft : Lineman Effective Date : 02/07/2024 Last Posted : 02/07/2024

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$50.66	\$7.25	\$1.52	\$0.51	\$0.00	\$12.16	\$0.75	\$0.00	\$0.00	\$72.85	\$98.18
Certified Lineman Welder	\$50.66	\$7.25	\$1.52	\$0.51	\$0.00	\$12.16	\$0.75	\$0.00	\$0.00	\$72.85	\$98.18
Certified Cable Splicer	\$50.66	\$7.25	\$1.52	\$0.51	\$0.00	\$12.16	\$0.75	\$0.00	\$0.00	\$72.85	\$98.18
Operator A	\$45.39	\$7.25	\$1.36	\$0.45	\$0.00	\$10.89	\$0.75	\$0.00	\$0.00	\$66.09	\$88.79
Operator B	\$40.18	\$7.25	\$1.21	\$0.40	\$0.00	\$9.64	\$0.75	\$0.00	\$0.00	\$59.43	\$79.52
Operator C	\$32.29	\$7.25	\$0.97	\$0.32	\$0.00	\$7.75	\$0.75	\$0.00	\$0.00	\$49.33	\$65.47
Groundman 0-12 months Exp	\$25.33	\$7.25	\$0.76	\$0.25	\$0.00	\$6.08	\$0.75	\$0.00	\$0.00	\$40.42	\$53.08
Groundman 0-12 months Exp w/CDL	\$27.86	\$7.25	\$0.84	\$0.28	\$0.00	\$6.69	\$0.75	\$0.00	\$0.00	\$43.67	\$57.60
Groundman 1 yr or more	\$27.86	\$7.25	\$0.84	\$0.28	\$0.00	\$6.69	\$0.75	\$0.00	\$0.00	\$43.67	\$57.60
Groundman 1 yr or more w/CDL	\$32.92	\$7.25	\$0.99	\$0.33	\$0.00	\$7.90	\$0.75	\$0.00	\$0.00	\$50.14	\$66.60
Equipment Mechanic A	\$40.18	\$7.25	\$1.21	\$0.40	\$0.00	\$9.64	\$0.75	\$0.00	\$0.00	\$59.43	\$79.52
Equipment Mechanic B	\$36.23	\$7.25	\$1.09	\$0.36	\$0.00	\$8.70	\$0.75	\$0.00	\$0.00	\$54.38	\$72.50
Equipment Mechanic C	\$32.29	\$7.25	\$0.97	\$0.32	\$0.00	\$7.75	\$0.75	\$0.00	\$0.00	\$49.33	\$65.47

X-Ray Technician	\$50.66	\$7.25	\$1.52	\$0.51	\$0.00	\$12.16	\$0.75	\$0.00	\$0.00	\$72.85	\$98.18	
Apprentice	Percent											
1st 1000 hrs	60.00	\$30.40	\$7.25	\$0.91	\$0.30	\$0.00	\$7.30	\$0.75	\$0.00	\$0.00	\$46.91	\$62.10
2nd 1000 hrs	65.00	\$32.93	\$7.25	\$0.99	\$0.33	\$0.00	\$7.90	\$0.75	\$0.00	\$0.00	\$50.15	\$66.61
3rd 1000 hrs	70.00	\$35.46	\$7.25	\$1.06	\$0.35	\$0.00	\$8.51	\$0.75	\$0.00	\$0.00	\$53.38	\$71.11
4th 1000 hrs	75.00	\$38.00	\$7.25	\$1.14	\$0.38	\$0.00	\$9.12	\$0.75	\$0.00	\$0.00	\$56.64	\$75.63
5th 1000 hrs	80.00	\$40.53	\$7.25	\$1.22	\$0.41	\$0.00	\$9.73	\$0.75	\$0.00	\$0.00	\$59.89	\$80.15
6th 1000 hrs	85.00	\$43.06	\$7.25	\$1.29	\$0.43	\$0.00	\$10.33	\$0.75	\$0.00	\$0.00	\$63.11	\$84.64
7th 1000 hrs	90.00	\$45.59	\$7.25	\$1.37	\$0.46	\$0.00	\$10.94	\$0.75	\$0.00	\$0.00	\$66.36	\$89.16

Special Calculation Note : Other is Health Reimbursement Account

Operator "A"

John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater than 25 tons and less than 45 tons).

Operator "B"

Cranes (greater than 6 tons and up to 25 tons), Backhoes, Road Tractor, Dozer up to D-5, Pressure Digger- wheeled or tracked, all Tension wire Stringing equipment.

Operator "C"

Trench, Backhoe, Riding type vibratory Compactor, Ground Rod Driver, Boom Truck (6 ton & below), Skid Steer Loaders, Material Handler.

*All Operators of cranes 45 ton or larger shall be paid the journeyman rate of pay.

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL,

TUSCARAWAS, UNION, VINTON, WARREN,
WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

Heli - Arc Welding will be paid \$.30 above Journeyman rate. Additional compensation of 10% over the Journeyman Lineman and Journeyman Technician for performing work on structures outside of buildings such as water towers, smoke stacks, radio and television towers, more than 75' above the ground.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 71 Outside Utility Power

Change # : LCN01-2024ibLoc7OutsideUtility

Craft : Lineman Effective Date : 02/07/2024 Last Posted : 02/07/2024

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$47.99	\$7.25	\$1.44	\$0.48	\$0.00	\$11.52	\$0.75	\$0.00	\$0.00	\$69.43	\$93.42
Substation Technician	\$47.99	\$7.25	\$1.44	\$0.48	\$0.00	\$11.52	\$0.75	\$0.00	\$0.00	\$69.43	\$93.42
Cable Splicer	\$50.26	\$7.25	\$1.51	\$0.50	\$0.00	\$12.06	\$0.75	\$0.00	\$0.00	\$72.33	\$97.46
Operator A	\$43.01	\$7.25	\$1.29	\$0.43	\$0.00	\$10.32	\$0.75	\$0.00	\$0.00	\$63.05	\$84.56
Operator B	\$38.02	\$7.25	\$1.14	\$0.38	\$0.00	\$9.12	\$0.75	\$0.00	\$0.00	\$56.66	\$75.67
Operator C	\$30.52	\$7.25	\$0.92	\$0.31	\$0.00	\$7.32	\$0.75	\$0.00	\$0.00	\$47.07	\$62.33
Groundman 0-12 months Exp	\$24.00	\$7.25	\$0.72	\$0.24	\$0.00	\$5.76	\$0.75	\$0.00	\$0.00	\$38.72	\$50.72
Groundman 0-12 months Exp w/CDL	\$26.40	\$7.25	\$0.79	\$0.26	\$0.00	\$6.33	\$0.75	\$0.00	\$0.00	\$41.78	\$54.98
Groundman 1 yr or more	\$26.40	\$7.25	\$0.79	\$0.26	\$0.00	\$6.33	\$0.75	\$0.00	\$0.00	\$41.78	\$54.98
Groundman 1 yr or more w/CDL	\$31.19	\$7.25	\$0.94	\$0.31	\$0.00	\$7.49	\$0.75	\$0.00	\$0.00	\$47.93	\$63.53
Equipment Mechanic A	\$38.02	\$7.25	\$1.14	\$0.38	\$0.00	\$9.12	\$0.75	\$0.00	\$0.00	\$56.66	\$75.67
Equipment Mechanic B	\$34.28	\$7.25	\$1.03	\$0.34	\$0.00	\$8.23	\$0.75	\$0.00	\$0.00	\$51.88	\$69.02
Equipment Mechanic C	\$30.52	\$7.25	\$0.92	\$0.31	\$0.00	\$7.32	\$0.75	\$0.00	\$0.00	\$47.07	\$62.33
Line Truck w/uuger	\$33.65	\$7.25	\$1.01	\$0.34	\$0.00	\$8.08	\$0.75	\$0.00	\$0.00	\$51.08	\$67.90

Apprentice	Percent											
1st 1000 hrs	60.00	\$28.79	\$7.25	\$0.86	\$0.29	\$0.00	\$6.91	\$0.75	\$0.00	\$0.00	\$44.85	\$59.25
2nd 1000 hrs	65.00	\$31.19	\$7.25	\$0.94	\$0.31	\$0.00	\$7.49	\$0.75	\$0.00	\$0.00	\$47.93	\$63.53
3rd 1000 hrs	70.00	\$33.59	\$7.25	\$1.01	\$0.34	\$0.00	\$8.06	\$0.75	\$0.00	\$0.00	\$51.00	\$67.80
4th 1000 hrs	75.00	\$35.99	\$7.25	\$1.08	\$0.36	\$0.00	\$8.64	\$0.75	\$0.00	\$0.00	\$54.07	\$72.07
5th 1000 hrs	80.00	\$38.39	\$7.25	\$1.15	\$0.38	\$0.00	\$9.21	\$0.75	\$0.00	\$0.00	\$57.13	\$76.33
6th 1000 hrs	85.00	\$40.79	\$7.25	\$1.22	\$0.41	\$0.00	\$9.79	\$0.75	\$0.00	\$0.00	\$60.21	\$80.61
7th 1000 hrs	90.00	\$43.19	\$7.25	\$1.30	\$0.43	\$0.00	\$10.37	\$0.75	\$0.00	\$0.00	\$63.29	\$84.89

Special Calculation Note : Other is Health Reimbursement Account

Operator "A"

John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater than 25 tons and less than 45 tons).

Operator "B"

Cranes (greater than 6 tons and up to 25 tons), Backhoes, Road Tractor, Dozer up to D-5, Pressure Digger- wheeled or tracked, all Tension wire Stringing equipment.

Operator "C"

Trench, Backhoe, Riding type vibratory Compactor, Ground Rod Driver, Boom Truck (6 ton & below), Skid Steer Loaders, Material Handler.

Ratio :

(1) Journeyman Lineman to (1) Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

Heli - Arc Welding will be paid \$.30 above Journeyman rate. Additional compensation of 10% over the

Journeyman Lineman and Journeyman Technician for performing work on structures outside of buildings such as water towers, smoke stacks, radio and television towers, more than 75' above the ground.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 71 Underground Residential Distribution

Change # : LCN01-2024ibLoc7URD

Craft : Lineman Effective Date : 02/07/2024 Last Posted : 02/07/2024

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
URD Electrician	\$36.41		\$7.25	\$1.09	\$0.36	\$0.00	\$8.74	\$0.75	\$0.00	\$0.00	\$54.60	\$72.80
Equipment Operator A	\$32.57		\$7.25	\$0.98	\$0.33	\$0.00	\$7.82	\$0.75	\$0.00	\$0.00	\$49.70	\$65.98
Equipment Operator B	\$29.91		\$7.25	\$0.90	\$0.30	\$0.00	\$7.18	\$0.75	\$0.00	\$0.00	\$46.29	\$61.25
Directional Drill Locator	\$32.57		\$7.25	\$0.98	\$0.33	\$0.00	\$7.82	\$0.75	\$0.00	\$0.00	\$49.70	\$65.98
Directional Drill Operator	\$29.91		\$7.25	\$0.90	\$0.30	\$0.00	\$7.18	\$0.75	\$0.00	\$0.00	\$46.29	\$61.25
Groundman 0-12 months Exp	\$23.64		\$7.25	\$0.71	\$0.24	\$0.00	\$5.76	\$0.75	\$0.00	\$0.00	\$38.35	\$50.17
Groundman 0-12 months Exp w/CDL	\$26.07		\$7.25	\$0.78	\$0.26	\$0.00	\$6.26	\$0.75	\$0.00	\$0.00	\$41.37	\$54.41
Groundman 1 yr or more	\$26.07		\$7.25	\$0.78	\$0.26	\$0.00	\$6.26	\$0.75	\$0.00	\$0.00	\$41.37	\$54.41
Groundman 1 yr or more w/CDL	\$30.96		\$7.25	\$0.93	\$0.31	\$0.00	\$7.43	\$0.75	\$0.00	\$0.00	\$47.63	\$63.11
Apprentice	Percent											
1st 1000 hrs	80.00	\$29.13	\$7.25	\$0.87	\$0.29	\$0.00	\$6.99	\$0.75	\$0.00	\$0.00	\$45.28	\$59.84
2nd 1000 hrs	85.00	\$30.95	\$7.25	\$0.93	\$0.31	\$0.00	\$7.43	\$0.75	\$0.00	\$0.00	\$47.62	\$63.09
3rd 1000 hrs	90.00	\$32.77	\$7.25	\$0.98	\$0.33	\$0.00	\$7.86	\$0.75	\$0.00	\$0.00	\$49.94	\$66.32

4th 1000 hrs	95.00	\$34.59	\$7.25	\$1.04	\$0.35	\$0.00	\$8.28	\$0.75	\$0.00	\$0.00	\$52.26	\$69.55
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Special Calculation Note : Other: Health Reimbursement Account

Ratio :

(1) Journeyman Lineman to (1) Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

This work applies to projects designated for any outside Underground Residential Distribution construction work for electrical utilities, municipalities and rural electrification projects.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 71 Voice Data Video Outside

Change # : LCN02-2024ibLoc71VDV

Craft : Voice Data Video Effective Date : 03/06/2024 Last Posted : 03/06/2024

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Installer Technician I	\$35.39		\$7.25	\$1.06	\$0.00	\$0.00	\$1.77	\$0.00	\$0.00	\$0.00	\$45.47	\$63.17
Installer Technician II	\$33.37		\$7.25	\$1.00	\$0.00	\$0.00	\$1.67	\$0.00	\$0.00	\$0.00	\$43.29	\$59.97
Installer Repairman	\$33.37		\$7.25	\$1.00	\$0.00	\$0.00	\$1.67	\$0.00	\$0.00	\$0.00	\$43.29	\$59.97
Equipment Operator II	\$24.98		\$7.25	\$0.75	\$0.00	\$0.00	\$1.25	\$0.00	\$0.00	\$0.00	\$34.23	\$46.72
Cable Splicer	\$35.39		\$7.25	\$1.06	\$0.00	\$0.00	\$1.77	\$0.00	\$0.00	\$0.00	\$45.47	\$63.17
Ground Driver W/CDL	\$16.69		\$7.25	\$0.50	\$0.00	\$0.00	\$0.83	\$0.00	\$0.00	\$0.00	\$25.27	\$33.62
Groundman	\$14.57		\$7.25	\$0.44	\$0.00	\$0.00	\$0.73	\$0.00	\$0.00	\$0.00	\$22.99	\$30.28
Trainees	Percent											
Trainee F	50.02	\$17.70	\$7.25	\$0.53	\$0.00	\$0.89	\$0.00	\$0.00	\$0.00	\$0.00	\$26.37	\$35.22
Trainee E	58.00	\$20.53	\$7.25	\$0.62	\$0.00	\$1.03	\$0.00	\$0.00	\$0.00	\$0.00	\$29.43	\$39.69
Trainee D	66.00	\$23.36	\$7.25	\$0.70	\$0.00	\$1.17	\$0.00	\$0.00	\$0.00	\$0.00	\$32.48	\$44.16
Trainee C	74.00	\$26.19	\$7.25	\$0.79	\$0.00	\$1.31	\$0.00	\$0.00	\$0.00	\$0.00	\$35.54	\$48.63
Trainee B	82.00	\$29.02	\$7.25	\$0.87	\$0.00	\$1.45	\$0.00	\$0.00	\$0.00	\$0.00	\$38.59	\$53.10
Trainee A	90.00	\$31.85	\$7.25	\$0.96	\$0.00	\$1.59	\$0.00	\$0.00	\$0.00	\$0.00	\$41.65	\$57.58

Special Calculation Note :

Ratio :

1 Trainee to 1 Journeyman

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA,

GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

Cable Splicer: Inspect and test lines or cables, analyze results, and evaluate transmission characteristics. Cover conductors with insulation or seal splices with moisture-proof covering. Install, splice, test, and repair cables using tools or mechanical equipment. This will include the splicing of fiber.

Installer Technician I: Must know all aspects of telephone and cable work. This is to include aerial, underground, and manhole work. Must know how to climb and run bucket. Must have all the tools required to perform these tasks. Must be able to be responsible for the safety of the crew at all times. Must also have CDL license and have at least 5 years experience.

Installer Repairman: Perform tasks of repairing, installing, and testing phone and CATV services.

Installer Technician II: Have at least three years of telephone and CATV experience. Must have the knowledge of underground, aerial, and manhole work. Must be able to climb and operate bucket. Must have CDL. Must have all tools needed to perform these tasks.

Equipment Operator II: Able to operate a digger derrick or bucket truck. Have at least 3 years of experience and must have a valid CDL license.

Groundman W/CDL: Must have a valid CDL license and be able to perform tasks such as: climbing poles, pulling down guys, making up material, and getting appropriate tools for the job. Must have at least 5 year's experience.

Groundman: Perform tasks such as: climbing poles, pulling down guys, making up material, and getting appropriate tools for the job. Experience 0-5 years.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 82 Inside

Change # : LCR01-2023ibLoc82in

Craft : Electrical Effective Date : 12/27/2023 Last Posted : 12/27/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$36.00		\$7.55	\$9.83	\$0.61	\$0.00	\$4.00	\$0.00	\$0.00	\$0.00	\$57.99	\$75.99
Apprentice	Percent											
1st period 0 - 1000 hrs	42.00	\$15.12	\$4.14	\$0.65	\$0.26	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20.17	\$27.73
2nd period 1001-2000 hrs	42.00	\$15.12	\$4.14	\$0.65	\$0.26	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20.17	\$27.73
3rd period 2001-3500 hrs	47.00	\$16.92	\$7.02	\$4.62	\$0.29	\$0.00	\$1.88	\$0.00	\$0.00	\$0.00	\$30.73	\$39.19
4th period 3501-5000 hrs	52.00	\$18.72	\$7.07	\$5.11	\$0.32	\$0.00	\$2.08	\$0.00	\$0.00	\$0.00	\$33.30	\$42.66
5th period 5001-6500 hrs	62.00	\$22.32	\$7.17	\$6.10	\$0.38	\$0.00	\$2.48	\$0.00	\$0.00	\$0.00	\$38.45	\$49.61
6th period 6501-8000 hrs	77.00	\$27.72	\$7.32	\$7.57	\$0.47	\$0.00	\$3.08	\$0.00	\$0.00	\$0.00	\$46.16	\$60.02

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 to 3 Journeymen to 4 Apprentices
4 to 6 Journeymen to 8 Apprentices
per job site

Jurisdiction (* denotes special jurisdictional note) :

CLINTON, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE, WARREN*

Special Jurisdictional Note : The following townships in Warren County are included: Clearcreek, Franklin and Wayne.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 82 Inside Lt Commercial South West

Change # : LCNO1-2021sksLoc82in

Craft : Electrical Effective Date : 03/30/2022 Last Posted : 03/30/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$33.25		\$6.47	\$9.35	\$0.72	\$0.00	\$3.50	\$0.00	\$0.00	\$0.00	\$53.29	\$69.91
CE-3 12,001-14,000	\$24.66		\$6.47	\$0.74	\$0.72	\$0.00	\$0.74	\$0.00	\$0.00	\$0.10	\$33.43	\$45.76
CE-2 10,001-12,000 Hrs	\$19.56		\$6.47	\$0.59	\$0.72	\$0.00	\$0.59	\$0.00	\$0.00	\$0.10	\$28.03	\$37.81
CE-1 8,001-10,000 Hrs	\$17.86		\$6.47	\$0.54	\$0.72	\$0.00	\$0.54	\$0.00	\$0.00	\$0.10	\$26.23	\$35.16
CW-4 6,001-8,000 Hrs	\$16.16		\$6.47	\$0.48	\$0.72	\$0.00	\$0.48	\$0.00	\$0.00	\$0.10	\$24.41	\$32.49
CW-3 4,001-6,000 Hrs	\$14.46		\$6.47	\$0.43	\$0.72	\$0.00	\$0.43	\$0.00	\$0.00	\$0.10	\$22.61	\$29.84
CW-2 2,001-4,000 Hrs	\$13.61		\$6.47	\$0.41	\$0.72	\$0.00	\$0.41	\$0.00	\$0.00	\$0.10	\$21.72	\$28.52
CW-1 0-2,000 Hrs	\$12.76		\$6.47	\$0.38	\$0.72	\$0.00	\$0.38	\$0.00	\$0.00	\$0.10	\$20.81	\$27.19
Apprentice	Percent											
1st period 0 - 1000 hrs	42.00	\$13.97	\$4.07	\$0.62	\$0.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.89	\$25.88
2nd period 1001-2000 hrs	42.00	\$13.97	\$4.07	\$0.62	\$0.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.89	\$25.88
3rd period 2001-3500 hrs	47.00	\$15.63	\$6.92	\$4.39	\$0.27	\$0.00	\$1.65	\$0.00	\$0.00	\$0.00	\$28.86	\$36.67
4th period 3501-5000 hrs	52.00	\$17.29	\$6.97	\$4.86	\$0.29	\$0.00	\$1.82	\$0.00	\$0.00	\$0.00	\$31.23	\$39.88
5th period 5001-6500	62.00	\$20.61	\$7.07	\$5.80	\$0.35	\$0.00	\$2.17	\$0.00	\$0.00	\$0.00	\$36.01	\$46.31

hrs												
6th period 6501-8000 hrs	77.00	\$25.60	\$7.22	\$7.20	\$0.44	\$0.00	\$2.70	\$0.00	\$0.00	\$0.00	\$43.16	\$55.96

Special Calculation Note : *Misc amount is Administrative Fees

Ratio :

1 to 3 Journeymen to 3 Apprentices
 4 to 6 Journeymen to 6 Apprentices
 per job site

Jurisdiction (* denotes special jurisdictional note) :

CLINTON, DARKE, GREENE, MIAMI,
 MONTGOMERY, PREBLE, WARREN*

Construction Electrician and Construction Wireman Ratio

There shall be a minimum ratio of one inside Journeyman to every (4) employees of different classification per jobsite. An inside Journeyman Wireman is required on the project as the fifth (5th) worker or when apprentices are used.

Special Jurisdictional Note : The following townships in Warren County are included: Clearcreek, Franklin and Wayne.

The scope of work for the light commercial agreement shall apply to the following facilities not to exceed 200,000 square feet; office buildings, shopping centers, auto sales agencies and garages, churches, funeral homes, nursing homes, hotels, retail and wholesale facilities, small stand-alone manufacturing facilities when free standing and not part of a larger facility (not to exceed 50,000 square fee), solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with remodels involving branch re-circuiting) lighting retrofits shall be defined as the changing of lamps and ballasts in existing light fixtures and shall also include the one for one replacement of existing fixtures, warehouses, gas stations, food service centers, restaurants, entertainment facilities, hospitals, clinics, motels, residential buildings.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 82 Lightning Rod

Change # : LCN02-2022ibLoc82

Craft : Electrical Effective Date : 12/05/2022 Last Posted : 11/23/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lightning Rod Technican	\$32.79	\$7.45	\$9.58	\$0.00	\$0.00	\$3.50	\$0.00	\$0.00	\$0.00	\$53.32	\$69.71

Special Calculation Note : No Apprentice approved by OSAC.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :
CLINTON, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE, WARREN*

Special Jurisdictional Note : The following townships in Warren County are included: (Clearcreek, Franklin and Wayne)

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 82 Voice Data Video

Change # : LCN01-2023ibLoc82VDV

Craft : Voice Data Video Effective Date : 11/27/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Installer Technician A	\$27.70		\$6.70	\$6.83	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.76	\$55.61
Electrical Installer Technician B	\$26.32		\$6.70	\$6.79	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.31	\$53.47
JW Installer Technician	\$24.93		\$6.70	\$6.75	\$0.47	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.85	\$51.32
NON BICSI Installer	\$18.01		\$3.94	\$0.54	\$0.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.83	\$31.83
Apprentice	Percent											
1st 0-1000 hours	55.00	\$15.24	\$3.94	\$3.76	\$0.29	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.23	\$30.84
2nd 1001-2000 hours	55.00	\$15.24	\$3.94	\$3.76	\$0.29	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.23	\$30.84
3rd 2001-3000 hours	65.00	\$18.00	\$6.65	\$4.44	\$0.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.44	\$38.44
4th 3001-4000 hours	65.00	\$18.00	\$6.65	\$4.44	\$0.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.44	\$38.44
5th 4001-5000 hours	75.00	\$20.77	\$6.66	\$6.62	\$0.39	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.45	\$44.83
6th 5001-6000 hours	75.00	\$20.77	\$6.66	\$6.62	\$0.39	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.45	\$44.83
7th 6001-7000 hours	80.00	\$22.16	\$6.67	\$6.66	\$0.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.91	\$46.99
8th 7001 hours	80.00	\$22.16	\$6.67	\$6.66	\$0.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.91	\$46.99
Cable Puller	50.00	\$13.85	\$3.94	\$0.42	\$0.26	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$18.72	\$25.65

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 Journeymen to 2 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CLINTON, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE, WARREN*

Special Jurisdictional Note : The following townships in Warren County are included: (Clearcreek, Franklin and Wayne)

Details :

Work covered but not limited to: installation which utilize transmission and/or transference of voice, sound, vision or digital for commercial, education, security and entertainment purposes for the following:

TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multimedia, multiplex, nurse call system, radio page, school intercom, sound and low voltage master clock systems.

Fire Alarm work is excluded on all new construction sites or wherever the fire alarm system is installed in conduit.

All HVAC control work is not covered by this wage rate but by the Inside Electrical wage rate.

Prevailing Wage Rate Skilled Crafts

Name of Union: Elevator Local 11

Change # : LCN01-2020fbLoc11

Craft : Elevator Effective Date : 01/05/2021 Last Posted : 01/05/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Elevator Mechanic	\$48.82		\$15.88	\$10.46	\$0.64	\$3.91	\$8.85	\$1.56	\$0.00	\$0.00	\$90.12	\$114.53
Probationary Apprentice	50.00	\$24.41	\$0.00	\$0.00	\$0.00	\$1.46	\$0.00	\$0.78	\$0.00	\$0.00	\$26.65	\$38.86
1st year	55.00	\$26.85	\$15.88	\$10.46	\$0.64	\$1.61	\$8.85	\$0.86	\$0.00	\$0.00	\$65.15	\$78.58
2nd year	65.00	\$31.73	\$15.88	\$10.46	\$0.64	\$1.90	\$8.85	\$1.02	\$0.00	\$0.00	\$70.48	\$86.35
3rd year	70.00	\$34.17	\$15.88	\$10.46	\$0.64	\$2.05	\$8.85	\$1.09	\$0.00	\$0.00	\$73.14	\$90.23
4th year	80.00	\$39.06	\$15.88	\$10.46	\$0.64	\$2.34	\$8.85	\$1.25	\$0.00	\$0.00	\$78.48	\$98.00
Helper	70.00	\$34.17	\$15.88	\$10.46	\$0.64	\$2.05	\$8.85	\$1.09	\$0.00	\$0.00	\$73.14	\$90.23
Assistant Mechanic	80.00	\$39.06	\$15.88	\$10.46	\$0.64	\$2.34	\$8.85	\$1.25	\$0.00	\$0.00	\$78.48	\$98.00

Special Calculation Note : Other is Holiday Pay. Vacation calculated at 6%.

Ratio :

The total number of Helpers & Apprentices employed shall not exceed the number of Mechanics on any one job, except on jobs where (2) teams or more are working, (1) extra Helper or Apprentice may be employed for the first (2) teams and an extra Helper or Apprentice for each additional (3) teams.

- 1 Journeymen to 1 Apprentice
- 2 Journeymen to 5 Apprentice
- 3 Journeymen to 6 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, BROWN, BUTLER, CLERMONT, CLINTON, DARKE, GREENE, HAMILTON, HIGHLAND, MIAMI, MONTGOMERY, PREBLE, SCIOTO, SHELBY, WARREN

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Glazier Local 387

Change # : LCN01-2023ibLoc387

Craft : Glazier Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Glazier	\$31.95		\$6.50	\$11.25	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.15	\$66.12
Apprentice	Percent											
1st Year	65.00	\$20.77	\$6.50	\$7.86	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.58	\$45.96
2nd Year	75.00	\$23.96	\$6.50	\$8.83	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.74	\$51.72
3rd Year	85.00	\$27.16	\$6.50	\$9.80	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.91	\$57.49
4th Year	95.00	\$30.35	\$6.50	\$10.77	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.07	\$63.25

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

Each employer may employ and train Apprentices in the following ratio to journeymen workers employed.
1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, DARKE, FAYETTE*, GREENE, HAMILTON, HIGHLAND, MIAMI, MONTGOMERY, PREBLE, WARREN

Special Jurisdictional Note : Fayette County: Eastern portion of route #41 being the dividing line between locals 372 and 387. Local 387 has jurisdiction of projects built on property which borders route #41 East.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Ironworker Local 290

Change # : LCN01-2023ibLoc290

Craft : Ironworker Effective Date : 11/17/2023 Last Posted : 11/17/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Ironworker Structural	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Welder	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Fence Erector	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Reinforcing Rods	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Machinery Mover	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Sheeter	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Metal Building Erector	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Rigger & Erector	\$32.69		\$8.90	\$9.50	\$0.65	\$0.00	\$5.00	\$0.01	\$0.00	\$0.00	\$56.75	\$73.10
Apprentice	Percent											
1st year	64.60	\$21.12	\$8.90	\$9.50	\$0.65	\$0.00	\$3.50	\$0.01	\$0.00	\$0.00	\$43.68	\$54.24
2nd year	74.60	\$24.39	\$8.90	\$9.50	\$0.65	\$0.00	\$3.50	\$0.01	\$0.00	\$0.00	\$46.95	\$59.14
3rd year	84.60	\$27.66	\$8.90	\$9.50	\$0.65	\$0.00	\$3.50	\$0.01	\$0.00	\$0.00	\$50.22	\$64.04
4th year	94.62	\$30.93	\$8.90	\$9.50	\$0.65	\$0.00	\$3.50	\$0.01	\$0.00	\$0.00	\$53.49	\$68.96

Special Calculation Note : Other is for Industry Fund.

Ratio :

ON STRUCTURAL WORK: 1 Apprentice to 3 Journeymen

ON ROD WORK: 1 Apprentice to 3 Journeymen

ON ALL FINISHING, STEEL SASH, STAIRWAY AND ORNAMENTAL WORK: 1 Apprentice to 1 Journeyman

ON ALL INDUSTRIAL MAINTENANCE PROJECTS

Jurisdiction (* denotes special jurisdictional note) :

ALLEN*, AUGLAIZE, BUTLER*, CHAMPAIGN*, CLARK, CLINTON, DARKE, FAYETTE*, GREENE, HARDIN*, HIGHLAND*, LOGAN*, MADISON*, MERCER*, MIAMI, MONTGOMERY, PREBLE, SHELBY, VAN WERT*, WARREN*

NOT COVERED BY OTHER SPECIALTY

AGREEMENTS: 2 Apprentices to 2 Journeymen

Special Jurisdictional Note : Allen County Twps included are: Auglaize, Perry, Shawnee, Amanda, Spencer, Marion, Sugar Creek, American, Bath, Jackson. Butler County Twps included are: Milford, Wayne, Madison, Lemon. Champaign Cnty Twps included are: Union, Urbana, Jackson, Concord, Salem, Mad River, Johnson, Harrison, Adams. Fayette County Twps included are: Green, Jasper, Concord, Jefferson. Hardin County Twps included are: Round Head, Marion, Liberty. Highland County Twps included are: Fairfield, Penn, Union, Marshall, Liberty, Paint, Brush Creek. Logan County Twps included are: Richland, Stokes, Bloomfield, Washington, Harrison, McArthur, Lake, Liberty, Pleasant, Miami. Madison County Twps included are: Stokes. Mercer County Twps included are: Dublin, Washington, Jefferson, Recovery, Gibson, Union, Liberty, Butler, Granville, Center, Hopewell, Franklin, Marion. VanWert County Twps included are: Jennings. Warren County Twps included are: Franklin, Clear Creek, Turtle Creek, Wayne, Massie, Washington, Salem, Union.

Details :

Structural Iron Work but not limited to:field fabrication, all loading to and including the erecting,rigging,assembly,dismantling, placing, temporary and permanent securing by any means of all structural iron,steel,ornamental lead,bronze,brass,copper,aluminum,glass all ferrous and non ferrous metal and composite material, precast prestressed and post-stressed concrete structures. Bridges and bridge rails,bridge viaducts,bucks bulkheads,bumper and bumper post,canopies and unistrut canopies,corrugated ferrous and non ferrous sheets when attached to steel frames,columns,beams,bar-joists,trusses,grinders,roof decking,electrical supports,elevator cars,elevator fronts and enclosures,erection of steel towers,flag poles, gymnasium equipment,stadium and arena seating,jail cell work,jail cell beds,benches,bunks,chairs,tables,mirrors,jail cell access doors,rigging and installation of machinery and equipment(erecting,aligning,anchoring and dismantling, erection and dismantling of tower cranes,derrick monorail systems, Chicago booms,overhead cranes,gantries,material and personnel hoists,tanks,hoppers and conveyors. All pre-engineered metal buildings and their entirety including siding,roofing, gutters, downspouts and erection of all.

Ornamental Iron Work but not limited to:all work in connection with field fabrication,handling including loading/off loading,sorting,cutting,fastening,anchoring,bending,hoisting,placing,burning,welding,and tying,dismantling of all materials used in miscellaneous iron or steel, for stairs,hand railings,rolling doors, rolling gates,rolling shutters,fence,windows,curtain wall,erection and welding of all metal, sash,architectural and ornamental treatments, but not necessarily limited to all sizes and types of ornamental,steel iron,lead,bronze,brass,copper,aluminum,all ferrous and non ferrous metals and composite materials

Fence Erector Iron Worker but not limited to: All work in connection with the field fabrication and erection of chain link fence,which includes but not limited to the loading and of the fence fabric and posts also the installation of the above.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor HevHwy 3

Change # : LCN01-2023ibLocalHevHwy3

Craft : Laborer Group 1 Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$34.62		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.42	\$65.73
Group 2	\$34.79		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.59	\$65.98
Group 3	\$35.12		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.92	\$66.48
Group 4	\$35.57		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.37	\$67.15
Watch Person	\$27.35		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.15	\$54.83
Apprentice	Percent											
0-1000 hrs	60.00	\$20.77	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$34.57	\$44.96
1001-2000 hrs	70.00	\$24.23	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$38.03	\$50.15
2001-3000 hrs	80.00	\$27.70	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.50	\$55.34
3001-4000 hrs	90.00	\$31.16	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$44.96	\$60.54
More than 4000 hrs	100.00	\$34.62	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.42	\$65.73

Special Calculation Note : Watchmen have no Apprentices. Tunnel Laborer rate with air-pressurized add \$1.00 to the above wage rate.

Ratio :

1 Journeymen to 1 Apprentice
3 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW,

MUSKINGUM, NOBLE, PAULDING, PERRY,
PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND,
ROSS, SCIOTO, SENECA, SHELBY,
TUSCARAWAS, UNION, VAN WERT, VINTON,
WARREN, WASHINGTON, WAYNE, WILLIAMS,
WYANDOT

Special Jurisdictional Note : Hod Carriers and Common Laborers - Heavy, Highway, Sewer, Waterworks, Utility, Airport, Railroad, Industrial and Building Site, Sewer Plant, Waste Water Treatment Facilities Construction

Details :

Group 1

Laborer (Construction); Plant Laborer or Yardman, Right-of-way Laborer, Landscape Laborer, Highway Lighting Worker, Signalization Worker, (Swimming) Pool Construction Laborer, Utility Man, *Bridge Man, Handyman, Joint Setter, Flagperson, Carpenter Helper, Waterproofing Laborer, Slurry Seal, Seal Coating, Surface Treatment or Road Mix Laborer, Riprap Laborer & Grouter, Asphalt Laborer, Dump Man (batch trucks), Guardrail & Fence Installer, Mesh Handler & Placer, Concrete Curing Applicator, Scaffold Erector, Sign Installer, Hazardous Waste (level D), Diver Helper, Zone Person and Traffic Control.

*Bridge Man will perform work as per the October 31, 1949, memorandum on concrete forms, by and between the United Brotherhood of Carpenters and Joiners of America and the Laborers' International Union of North America, which states in; "the moving, cleaning, oiling and carrying to the next point of erection, and the stripping of forms which are not to be re-used, and forms on all flat arch work shall be done by members of the Laborers' International Union of North America."

Group 2

Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air), Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous Waste (level B), ***Lead Abatement, Hazardous Waste (level C)

***Includes the erecting of structures for the removal, including the encapsulation and containment of Lead abatement process.

Group 3

Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarner, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

Group 4

Miner, Welder, Gunitite Nozzle Person

A.) The Watchperson shall be responsible to patrol and maintain a safe traffic zone including but not limited to barrels, cones, signs, arrow boards, message boards etc.

The responsibility of a watchperson is to see that the equipment, job and office trailer etc. are secure.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor Local 1410 Building

Change # : LCN01-2023ibLoc1410

Craft : Laborer Effective Date : 04/05/2023 Last Posted : 04/05/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$30.35		\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.10	\$58.28
Group 2	\$30.95		\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.70	\$59.17
Group 3	\$31.45		\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$44.20	\$59.92
Apprentice	Percent											
Building Laborer 1-1000 hrs	60.00	\$18.21	\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$30.96	\$40.07
1001-2000	70.02	\$21.25	\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$34.00	\$44.63
2001-3000	80.00	\$24.28	\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$37.03	\$49.17
3001-4000	89.99	\$27.31	\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$40.06	\$53.72
More than 4000 hrs	100.00	\$30.35	\$8.20	\$4.05	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$43.10	\$58.28

Special Calculation Note : \$0.10 LECET is for Labor Management.

Ratio :

1 Journeymen to 1 Apprentice
4 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, DARKE, GREENE, LOGAN, MIAMI, MONTGOMERY, PREBLE

Special Jurisdictional Note :

Details :

Group 1

Building & Construction Laborer, Railroad Laborer, Asbestos & Hazardous Waste (Levels A,B,C, & D), Concrete Crew, Form Setter, Pipelayer, Bottom Man, Burner (Cutting Torch), Welder Helper, All Machine & Power Driven Tools, Sandblaster
Yardman-Landscaping, Sewer Jet, Waterperson, Tool Cage Laborer, Unloading Furniture & Fixtures, Final Clean-Up
Watchman, Residential Construction, Signal Men

Group 2

Mason Tender For Bricklayers, Flexcore, Firebrick Tender (Blast Furnaces, Soaking Pits, Stoves & Stacks), Plasterer Tenders & Lathers

Group 3
Tender Operator

Asbestos, Lead and Hazardous Material:

The removal, abatement or encapsulation of asbestos, lead and/or toxic and hazardous waste or materials is defined as all work included in the erection, moving servicing and dismantling of all enclosures, scaffolding, barricades, etc. and the operation of all tools and equipment (including generators, compressors and vacuums) normally used in the removal or abatement or asbestos, lead and toxic and hazardous waste or materials; the labeling, bagging, cartoning, crating or otherwise packaging of materials for disposal; as well as the clean-up of the work site and all other work incidental to the removal, abatement or encapsulation of asbestos, lead or toxic and hazardous waste materials.

Level A

Protective equipment is required when the area has been determined to contain extremely toxic contaminants or contaminants unknown but may be expected to be extremely toxic and/or immediately dangerous to life and health. This ensemble includes a fully encapsulated chemical suit, self contained breathing apparatus (SCBA) or airline fed respirator, and various types and numbers of boots and gloves.

Level B

Protective equipment includes a chemically resistant splash suit and a SCBA or airline respirator. This ensemble is required when the situation is very hazardous, such as oxygen deficient atmospheres, IDLH atmospheres, or confined space entries.

Level C

Protective equipment includes a protective suit and an air purifying respirator (APR) with the appropriate filter canisters.

Level D

To be worn only in established "safe zones" may consist of, from normal work clothes to normal skin protection such as gloves, face shields goggles, coveralls and occasionally respiratory protection.

1st Year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.00	\$47.37
2nd Year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$41.14	\$53.59
3rd Year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$45.29	\$59.81
4th Year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.44	\$66.04

Special Calculation Note : Other: Education & Safety \$0.09; *Misc is National Training

Ratio :

For every (3) Operating Engineer Journeymen employed by the company there may be employed (1) Registered Apprentice or trainee Engineer through the referral when they are available. An apprentice, while employed as part of a crew per Article VIII, paragraph 78, will not be subject to the apprenticeship ratios in this collective bargaining agreement

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WYANDOT

Special Jurisdictional Note :

Details :

Note: There will be a 10% increase for the apprentices on top of the percentages listed above provided they are operating mobile equipment. Mechanic Trainees will receive 10% increase if required to have CDL

Group A- Barrier Moving Machines; Boiler Operators or Compressor Operators, when compressor or boiler is mounted on crane (Piggyback Operation); Boom Trucks (all types); Cableways Cherry Pickers; Combination - Concrete Mixers & Towers; All Concrete Pumps with Booms; Cranes (all types); Compact Cranes, track or rubber over 4,000 pounds capacity; Cranes self-erecting, stationary, track or truck (all configurations); Derricks (all types); Draglines; Dredges (dipper, clam or suction) 3-man crew; Elevating Graders or Euclid Loaders; Floating Equipment; Forklift (rough terrain with winch/hoist); Gradalls; Helicopter Operators, hoisting building materials; Helicopter Winch Operators, Hoisting building materials; Hoes (All types); Hoists (with two or more drums in use); Horizontal Directional Drill; Hydraulic Gantry (lift system); Laser Finishing Machines; Laser Screed and like equipment; Lift Slab or Panel Jack Operators; Locomotives (all types); Maintenance Operator/Technician(Mechanic Operator/Technician and/or Welder); Mixers, paving (multiple drum); Mobile Concrete Pumps, with booms; Panelboards, (all types on site); Pile Drivers; Power Shovels; Prentice Loader; Rail Tamper (with automatic lifting and aligning device); Rotary Drills (all), used on caissons for foundations and sub-structure; Side Booms; Slip Form Pavers; Straddle Carriers (Building Construction on site); Trench Machines (over 24" wide); Tug Boats.

Group B - Articulating/end dumps (minus \$4.00/hour from Group B rate); Asphalt Pavers; Bobcat-type and/or skid steer loader with hoe attachment greater than 7000 lbs.; Bulldozers; CMI type Equipment; Concrete Saw, Vermeer-type; Endloaders; Hydro Milling Machine; Kolman-type Loaders (Dirt Loading); Lead Greasemen; Mucking Machines; Pettibone-Rail Equipment; Power Graders; Power Scoops; Power Scrapers; Push Cats;, Rotomills (all), grinders and planers of all types.

Group C - A-Frames; Air Compressors, Pressurizing Shafts or Tunnels; All Asphalt Rollers; Bobcat-type and/or Skid Steer Loader with or without attachments; Boilers (15 lbs. pressure and over); All Concrete Pumps (without booms with 5 inch system); Fork Lifts (except masonry); Highway Drills - all types (with integral power); Hoists (with one drum); House Elevators (except those automatic call button controlled), Buck Hoists, Transport Platforms, Construction Elevators; Hydro Vac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Man Lifts; Material hoist/elevators; Mud Jacks; Pressure Grouting; Pump Operators (installing or operating Well Points or other types of Dewatering Systems); Pumps (4 inches and over discharge); Railroad Tie (Inserter/Remover); Rotovator (Lime-Soil Stabilizer); Submersible Pumps (4" and over discharge); Switch & Tie Tampers (without lifting and aligning device); Trench Machines (24" and under); Utility Operators.

Group D - Backfillers and Tampers; Ballast Re-locator; Batch Plant Operators; Bar and Joint Installing Machines; Bull Floats; Burlap and Curing Machines; Clefplanes; Compressors, on building construction; Concrete Mixers, more than one bag capacity; Concrete Mixers, one bag capacity (side loaders); All Concrete Pumps (without boom with 4" or smaller system); Concrete Spreader; Conveyors, used for handling building materials; Crushers; Deckhands; Drum Fireman (in asphalt plants); Farm type tractors pulling attachments; Finishing Machines; Form Trenchers; Generators: Guniting Machines; Hydro-seeders; Pavement Breakers (hydraulic or cable); Post Drivers; Post Hole Diggers; Pressure Pumps (over 1/2" discharge); Road Widening Trenchers; Rollers (except asphalt); Self-propelled sub-graders; Shotcrete Machines; Tire Repairmen; Tractors, pulling sheepsfoot post roller or grader; VAC/ALLS; Vibratory Compactors, with integral power; Welders.

Group E - Allen Screed Paver (concrete); Boilers (less than 15 lbs. pressure); Cranes-Compact, track or rubber (under 4,000 pounds capacity); Directional Drill "Locator"; Fueling and greasing +\$3.00; Inboard/outboard Motor Boat Launches; Light Plant Operators; Masonry Fork Lifts; Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson, Submersible Pumps (under 4" discharge).

Master Mechanics - Master Mechanic

Cranes 150' - 180' - Boom & Jib 150 - 180 feet

Cranes 180' - 249' - Boom & Jib 180 - 249 feet

Cranes 250' and over - Boom & Jib 250-feet or over

Prevailing Wage Rate Skilled Crafts

Name of Union: Operating Engineers - HevHwy Zone II

Change # : LCN01-2023ibLoc18hevhwyl

Craft : Operating Engineer Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Class A	\$41.49		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.74	\$78.48
Operator Class B	\$41.37		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.62	\$78.30
Operator Class C	\$40.33		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.58	\$76.74
Operator Class D	\$39.15		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$55.40	\$74.97
Operator Class E	\$33.69		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.94	\$66.78
Master Mechanic	\$41.74		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.99	\$78.86
Apprentice	Percent											
1st Year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.00	\$47.37
2nd Year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$41.14	\$53.59
3rd Year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$45.29	\$59.81
4th Year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.44	\$66.04
Field Mech Trainee Class 2												
1st year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.00	\$47.37
2nd year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$41.14	\$53.59
3rd year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$45.29	\$59.81
4th year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.44	\$66.04

Special Calculation Note : Other: Education & Safety Fund is \$0.09 per hour. *Misc is National Training

Ratio :

For every (3) Operating Engineer Journeymen employed by the company, there may be employed (1) Registered Apprentice or Trainee Engineer through the referral when they are available. An Apprentice, while

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE,

employed as part of a crew per Article VIII, paragraph 65 will not be subject to the apprenticeship ratios in this collective bargaining agreement

DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

**Apprentices will receive a 10% increase on top of the percentages listed above provided they are operating mobile equipment. Mechanic Trainees will receive 10% increase if they are required to have CDL.

Class A - Air Compressors on Steel Erection; Asphalt Plant Engineers (Cleveland District Only); Barrier Moving Machine; Boiler Operators, Compressor Operators, or Generators, when mounted on a rig; Boom Trucks (all types); Cableways; Cherry Pickers; Combination- Concrete Mixers & Towers; Concrete Plants (over 4 yd capacity); Concrete Pumps; Cranes (all types); Compact Cranes track or rubber over 4,000 pounds capacity; Cranes self-erecting stationary, track or truck; Derricks (all types); Draglines; Dredges dipper, clam or suction; Elevating Graders or Euclid Loaders; Floating Equipment (all types); Gradalls; Helicopter Crew (Operator- hoist or winch); Hoes (all types); Hoisting Engines; Hoisting Engines, on shaft or tunnel work; Hydraulic Gantry (lifting system); Industrial-type Tractors; Jet Engine Dryer (D8 or D9) diesel Tractors; Locomotives (standard gauge); Maintenance Operators/Technicians (class A); Mixers, paving (single or double drum); Mucking Machines; Multiple Scrapers; Piledriving Machines (all types); Power Shovels, Prentice Loader; Quad 9 (double pusher); Rail Tamper (with automatic lifting and aligning device); Refrigerating Machines (freezer operation); Rotary Drills, on caisson work; Rough Terrain Fork Lift with winch/hoist; Side Booms; Slip Form Pavers; Survey Crew Party Chiefs; Tower Derricks; Tree Shredders; Trench Machines (over 24" wide); Truck Mounted Concrete Pumps; Tug Boats; Tunnel Machines and /or Mining Machines; Wheel Excavators.

Class B - Asphalt Pavers; Automatic Subgrade Machines, self-propelled (CMI-type); Bobcat-type and /or Skid Steer Loader with hoe attachment greater than 7000 lbs.; Boring Machine Operators (more than 48 inches); Bulldozers; Concrete Saws, Vermeer type; Endloaders; Horizontal Directional Drill (50,000 ft. lbs. thrust and over); Hydro Milling Machine; Kolman-type Loaders (production type-dirt); Lead Greasemen; Lighting and Traffic Signal Installation Equipment includes all groups or classifications; Maintenance Operators/Technicians, Class B; Material Transfer Equipment (shuttle buggy) Asphalt; Pettibone-Rail Equipment; Power Graders; Power Scrapers; Push Cats; Rotomills (all), Grinders and Planners of all types, Groovers (excluding walk-behinds); Trench Machines (24 inch wide and under).

Class C - A-Frames; Air Compressors, on tunnel work (low Pressure); Articulating/straight bed end dumps if assigned (minus \$4.00 per hour); Asphalt Plant Engineers (Portage and Summit Counties only); Bobcat-type and/or skid steer loader with or without attachments; Drones; Highway Drills (all types); HydroVac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Locomotives (narrow gauge); Material Hoist/Elevators; Mixers, concrete (more than one bag capacity); Mixers, one bag capacity (side loader); Power Boilers (over 15 lbs. pressure); Pump Operators (installing or operating well Points); Pumps (4 inch and over discharge); Railroad Tie Inserter/Remover; Rollers, Asphalt; Rotovator (lime-soil Stabilizer); Switch & Tie Tampers (without lifting and aligning device); Utilities Operators, (small equipment); Welding Machines and

Generators.

Class D – Backfillers and Tampers; Ballast Re-locator; Bar and Joint Installing Machines; Batch Plant Operators; Boring Machine Operators (48 inch or less); Bull Floats; Burlap and Curing Machines; Concrete Plants (capacity 4 yds. and under); Concrete Saws (multiple); Conveyors (highway); Crushers; Deckhands; Farm type tractors, with attachments (highway); Finishing Machines; Firemen, Floating Equipment (all types); Fork Lifts (highway), except masonry; Form Trenchers; Hydro Hammers; Hydro Seeders; Pavement Breakers (hydraulic or cable); Plant Mixers; Post Drivers; Post Hole Diggers; Power Brush Burners; Power Form Handling Equipment; Road Widening Trenchers; Rollers (brick, grade, macadam); Self-Propelled Power Spreaders; Self-Propelled Sub-Graders; Steam Firemen; Survey Instrument men; Tractors, pulling sheepsfoot rollers or graders; Vibratory Compactors, with integral power.

Class E - Compressors (portable, Sewer, Heavy and Highway); Cranes-Compact, track or rubber under 4,000 pound capacity; Drum Firemen (asphalt plant); Fueling and greasing (Primary Operator with Specialized CDL Endorsement Add \$3.00/hr); Generators; Inboard-Outboard Motor Boat Launches; Masonry Fork Lifts; Oil Heaters (asphalt plant); Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson; Survey Rodmen or Chairmen; Tire Repairmen; VAC/ALLS.
Master Mechanic - Master Mechanic

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 249

Change # : LCN03-2023ibLoc249

Craft : Drywall Finisher Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Drywall Finisher	\$25.60		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$51.92
Apprentice	Percent											
30 Day Probationary	50.00	\$12.80	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20.08	\$26.48
1st Year	65.00	\$16.64	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.92	\$32.24
2nd Year	65.00	\$16.64	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.92	\$32.24
3rd Year	75.00	\$19.20	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.48	\$36.08
4th Year	85.00	\$21.76	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.04	\$39.92

Special Calculation Note :

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CLARK, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE

Special Jurisdictional Note :

Details :

Industrial work but not limited to:work done on industrial plants, repair garages, processing plants,storage tanks, warehouses, skeleton structures,bridges,whether new or old construction, office buildings in industrial sites and interior of shopping malls.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 249

Change # : LCN03-2023ibLoc249

Craft : Painter Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Brush Roll	\$25.60		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$51.92
Paper Hanger	\$25.60		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$51.92
Spray Commercial	\$25.60		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$51.92
Spray Industrial	\$25.60		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.12	\$51.92
Sandblasting, Steam Cleaning-Lead Abatment	\$26.35		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.87	\$53.05
Special Coating (Coal Tar) Spray Applied	\$27.10		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.62	\$54.17
Steeplejack Work	\$26.55		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.07	\$53.35
Elevated Tanks	\$29.54		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.06	\$57.83
Water Blasting	\$26.35		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.87	\$53.05
Apprentice	Percent											
30 Day Probationary	50.00	\$12.80	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20.08	\$26.48
1st Year	65.00	\$16.64	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.92	\$32.24
2nd Year	65.00	\$16.64	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.92	\$32.24
3rd Year	75.00	\$19.20	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.48	\$36.08
4th Year	85.00	\$21.76	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.04	\$39.92

Special Calculation Note :

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CLARK, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE

Special Jurisdictional Note :**Details :**

Industrial work but not limited to:work done on industrial plants, repair garages, processing plants,storage tanks, warehouses, skeleton structures,bridges,whether new or old construction, office buildings in industrial sites and interior of shopping malls.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 249 HevHwy

Change # : LCN03-2023ibLoc249

Craft : Painter Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Bridge Blaster Class 1	\$37.31		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.83	\$69.48
Bridge Painter, Rigger, Containment Builder, Spot Blaster Class 2	\$34.31		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.83	\$64.98
Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control, Boat Person, Driver Class 3	\$32.31		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.83	\$61.99
Concrete Sealing, Concrete Blasting/Power Washing/Etc. Class 4	\$30.31		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.83	\$58.98
Quality Control/Quality Assurance, Traffic safety, Competent Person Class 5	\$30.31		\$6.50	\$6.69	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.83	\$58.98
Apprentice	Percent											
30 day Probationary	50.00	\$18.66	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.93	\$35.26
1st Year	65.00	\$24.25	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.53	\$43.66
2nd Year	65.00	\$24.25	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.53	\$43.66
3rd Year	75.00	\$27.98	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.26	\$49.25
4th Year	85.00	\$31.71	\$6.50	\$0.45	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.99	\$54.85

Special Calculation Note :

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CLARK, DARKE, GREENE, MIAMI,
MONTGOMERY, PREBLE

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 639 Zone 2 Sign

Change # : LCN01-2023ibLoc639

Craft : Painter Effective Date : 03/22/2023 Last Posted : 03/22/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Sign Journeyman Tech/Team Leader Class A	\$25.28	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.68	\$0.00	\$0.00	\$27.87	\$40.51
Painter Sign Journeyman Tech/Team Leader Class B	\$25.28	\$1.70	\$0.21	\$0.00	\$0.49	\$0.00	\$0.68	\$0.00	\$0.00	\$28.36	\$41.00
Painter Sign Journeyman Tech/Team Leader Class C	\$25.28	\$1.70	\$0.21	\$0.00	\$0.97	\$0.00	\$0.68	\$0.00	\$0.00	\$28.84	\$41.48
Painter Sign Journeyman Tech/Team Leader Class D	\$25.28	\$1.70	\$0.21	\$0.00	\$1.46	\$0.00	\$0.68	\$0.00	\$0.00	\$29.33	\$41.97
Sign Journeyman Class A	\$25.00	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.67	\$0.00	\$0.00	\$27.58	\$40.08
Sign Journeyman Class B	\$25.00	\$1.70	\$0.21	\$0.00	\$0.48	\$0.00	\$0.67	\$0.00	\$0.00	\$28.06	\$40.56
Sign Journeyman Class C	\$25.00	\$1.70	\$0.21	\$0.00	\$0.96	\$0.00	\$0.67	\$0.00	\$0.00	\$28.54	\$41.04
Sign Journeyman Class D	\$25.00	\$1.70	\$0.21	\$0.00	\$1.44	\$0.00	\$0.67	\$0.00	\$0.00	\$29.02	\$41.52
Tech Sign Fabrication/ Erector Class A	\$19.67	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.53	\$0.00	\$0.00	\$22.11	\$31.95

Tech Sign Fabrication/ Erector Class B	\$19.67	\$1.70	\$0.21	\$0.00	\$0.38	\$0.00	\$0.53	\$0.00	\$0.00	\$22.49	\$32.33
Tech Sign Fabrication/ Erector Class C	\$19.67	\$1.70	\$0.21	\$0.00	\$0.76	\$0.00	\$0.53	\$0.00	\$0.00	\$22.87	\$32.71
Tech Sign Fabrication/ Erector Class D	\$19.67	\$1.70	\$0.21	\$0.00	\$1.13	\$0.00	\$0.53	\$0.00	\$0.00	\$23.24	\$33.08

Special Calculation Note : Other is for paid holidays.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, AUGLAIZE, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GREENE, HAMILTON, HANCOCK, HARDIN, HENRY, HIGHLAND, HOLMES, HURON, JACKSON, KNOX, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MERCER, MIAMI, MONTGOMERY, MORROW, MUSKINGUM, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, WARREN, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Class A: less than 1 year.

Class B: 1-3 years.

Class C; 3-10 years.

Class D: More than 10 years.

Prevailing Wage Rate Skilled Crafts

Name of Union: Plasterer Local 132 (Dayton)

Change # : LCN01-2023ibLoc132

Craft : Plaster Effective Date : 05/03/2023 Last Posted : 05/03/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Plasterer	\$27.39		\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.06	\$0.00	\$0.00	\$46.75	\$60.45
Apprentice	Percent											
1st 6 months	70.00	\$19.17	\$7.80	\$0.00	\$0.70	\$0.00	\$3.45	\$0.06	\$0.00	\$0.00	\$31.18	\$40.77
2nd 6 months	74.00	\$20.27	\$7.80	\$0.00	\$0.70	\$0.00	\$3.45	\$0.06	\$0.00	\$0.00	\$32.28	\$42.41
3rd 6 months	78.00	\$21.36	\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.00	\$0.00	\$0.00	\$40.66	\$51.35
4th 6 months	82.00	\$22.46	\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.00	\$0.00	\$0.00	\$41.76	\$52.99
5th 6 months	86.00	\$23.56	\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.00	\$0.00	\$0.00	\$42.86	\$54.63
6th 6 months	90.00	\$24.65	\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.00	\$0.00	\$0.00	\$43.95	\$56.28
7th 6 months	94.00	\$25.75	\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.00	\$0.00	\$0.00	\$45.05	\$57.92
8th 6 months	98.00	\$26.84	\$7.80	\$7.35	\$0.70	\$0.00	\$3.45	\$0.00	\$0.00	\$0.00	\$46.14	\$59.56

Special Calculation Note : *Other is International Training.

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE, SHELBY

Special Jurisdictional Note :

Details :

OTHER IS:Industry Fund

Prevailing Wage Rate Skilled Crafts

Name of Union: Plumber Pipefitter Local 162

Change # : LCN01-2023ibLoc162

Craft : Plumber/Pipefitter Effective Date : 08/30/2023 Last Posted : 08/30/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Plumber Pipefitter	\$40.00		\$11.75	\$10.87	\$0.90	\$0.00	\$3.35	\$0.00	\$0.00	\$0.00	\$66.87	\$86.87
Apprentice Indentured AFTER 6/1/2002												
Percent												
1st Year	51.00	\$20.40	\$11.75	\$3.26	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.91	\$46.11
2nd Year	55.90	\$22.36	\$11.75	\$5.69	\$0.54	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.34	\$51.52
3rd Year	60.80	\$24.32	\$11.75	\$8.53	\$0.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.18	\$57.34
4th Year	72.45	\$28.98	\$11.75	\$10.63	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.02	\$66.51
5th Year	80.40	\$32.16	\$11.75	\$10.87	\$0.74	\$0.00	\$3.35	\$0.00	\$0.00	\$0.00	\$58.87	\$74.95

Special Calculation Note :

Ratio :

- 1 Journeyman to 1 Apprentice
- 2 - 4 Journeymen to 2 Apprentices
- 5 - 7 Journeymen to 3 Apprentices
- 8 - 10 Journeymen to 4 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

CHAMPAIGN, CLARK, CLINTON, DARKE, FAYETTE, GREENE, MIAMI, MONTGOMERY, PREBLE

Special Jurisdictional Note :

Details :

Wage rate covers: all plumbing, pipefitting, heating, refrigeration and air conditioning work.

Prevailing Wage Rate Skilled Crafts

Name of Union: Roofer Local 75

Change # : LCN01-2022sksLoc75

Craft : Roofer Effective Date : 08/26/2022 Last Posted : 08/26/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Roofer	\$25.63		\$8.73	\$8.78	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$45.70	\$58.51
Slate and Tile	\$25.85		\$8.73	\$8.78	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$45.92	\$58.85
Apprentice												
	Percent											
1st term 1000 hrs	66.32	\$17.00	\$2.50	\$0.50	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$22.56	\$31.06
2nd term 1000 hrs	70.22	\$18.00	\$8.58	\$1.32	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$30.46	\$39.46
3rd term 1000 hrs	74.12	\$19.00	\$8.58	\$2.20	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$32.34	\$41.84
4th term 1000 hrs	78.02	\$20.00	\$8.58	\$3.07	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$34.21	\$44.20
5th term 1000 hrs	81.95	\$21.00	\$8.58	\$3.95	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$36.09	\$46.60
Tradesman	79.00	\$20.25	\$5.00	\$1.58	\$0.76	\$0.00	\$0.00	\$1.80	\$0.00	\$0.00	\$29.39	\$39.51

Special Calculation Note : Other is for National Roofing Industry Pension Plan.

Ratio :

3 Journeymen to 2 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CLARK, CLINTON, DARKE, GREENE, MERCER, MIAMI, MONTGOMERY, PREBLE, SHELBY, VAN WERT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Sheet Metal Local 24 (Dayton)

Change # : LCN01-2023ibLoc24(Day)

Craft : Sheet Metal Worker Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Sheet Metal Worker	\$31.23		\$9.64	\$15.10	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$57.02	\$72.63
Apprentice	Percent											
Apprentice												
5th Year B	85.00	\$26.55	\$9.40	\$11.47	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.47	\$61.74
5th Year A	80.00	\$24.98	\$9.31	\$10.28	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.62	\$58.12
4th Year B	75.00	\$23.42	\$9.23	\$9.07	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.77	\$54.48
4th Year A	70.00	\$21.86	\$9.15	\$7.85	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.91	\$50.84
3rd year B	65.00	\$20.30	\$9.06	\$6.65	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.06	\$47.21
3rd Year A	60.00	\$18.74	\$8.98	\$5.44	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.21	\$43.58
2 Year B	57.52	\$17.96	\$8.94	\$4.84	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.79	\$41.78
2 Year A	55.00	\$17.18	\$8.90	\$4.23	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.36	\$39.94
Probationary 1 Year	52.50	\$16.40	\$8.86	\$3.63	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.94	\$38.13

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 Journeyman to 1 Apprentice then,
1 Apprentice for every 2 Journeymen thereafter

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, BUTLER, CHAMPAIGN,
CLARK, CLINTON, DARKE, GREENE, HARDIN,
LOGAN, MERCER, MIAMI, MONTGOMERY,
PREBLE, SHELBY, VAN WERT, WARREN,
WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Sprinkler Fitter Local 669

Change # : LCN01-2022sksLoc669

Craft : Sprinkler Fitter Effective Date : 04/06/2022 Last Posted : 04/06/2022

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sprinkler Fitter	\$43.75		\$10.99	\$7.10	\$0.52	\$0.00	\$5.12	\$0.00	\$0.00	\$0.00	\$67.48	\$89.35
Apprentice Indentured after April 1, 2013	Percent											
CLASS 1	45.00	\$19.69	\$7.85	\$0.00	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.06	\$37.90
CLASS 2	50.02	\$21.88	\$7.85	\$0.00	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.25	\$41.20
CLASS 3	54.43	\$23.81	\$10.99	\$7.10	\$0.52	\$0.00	\$1.15	\$0.00	\$0.00	\$0.00	\$43.57	\$55.48
CLASS 4	59.43	\$26.00	\$10.99	\$7.10	\$0.52	\$0.00	\$1.15	\$0.00	\$0.00	\$0.00	\$45.76	\$58.76
CLASS 5	64.43	\$28.19	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$48.20	\$62.29
CLASS 6	69.43	\$30.38	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$50.39	\$65.57
CLASS 7	74.43	\$32.56	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$52.57	\$68.85
CLASS 8	79.42	\$34.75	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$54.76	\$72.13
CLASS 9	84.43	\$36.94	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$56.95	\$75.42
CLASS 10	89.44	\$39.13	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$59.14	\$78.70

Special Calculation Note :

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW,

MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Sprinkler Fitter work shall consist of the installation, dismantling, maintenance, repairs, adjustments, and corrections of all fire protection and fire control systems including the unloading, handling by hand, power equipment and installation of all piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, standpipes and hose connections to sprinkler systems used in connection with sprinkler and alarm systems. Also all tanks and pumps connected thereto, also included shall be CO-2 and Cardox Systems, Dry Chemical Systems, Foam Systems and all other fire protection systems.

Prevailing Wage Rate Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 1
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : LCN01-2023ibBldgHevHwy

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 1 4 wheel service, dump, and batch trucks; drivers on tandems; truck sweepers (not to include power sweepers & scrubbers)	\$31.24		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.39	\$64.01
Apprentice	Percent											
First 6 months	80.00	\$24.99	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.14	\$54.64
7-12 months	85.00	\$26.55	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.70	\$56.98
13-18 months	90.00	\$28.12	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.27	\$59.32
19-24 months	95.00	\$29.68	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.83	\$61.67
25-30 months	100.00	\$31.24	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.39	\$64.01

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK,

CLERMONT, CLINTON, COLUMBIANA,
COSHOCTON, CRAWFORD, DARKE, DEFIANCE,
DELAWARE, ERIE, FAIRFIELD, FAYETTE,
FRANKLIN, FULTON, GALLIA, GREENE,
GUERNSEY, HAMILTON, HANCOCK, HARDIN,
HARRISON, HENRY, HIGHLAND, HOCKING,
HOLMES, HURON, JACKSON, JEFFERSON,
KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate

Skilled Crafts

Name of Union: Truck Driver Bldg & HevHwy Class 2
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCN01-2023ibBldgHevHwy

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Truck Driver CLASS 2 Tractor Trailer-Semi Tractor Trucks; Pole Trailers; Ready Mix Trucks; Fuel Trucks; 5 Axle & Over; Belly Dumps; Low boys - Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation; Truck Mechanics (when needed)	\$31.66		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.64
Apprentice	Percent											
First 6 months	80.00	\$25.33	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.48	\$55.14
7-12 months	85.00	\$26.91	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.06	\$57.52
13-18 months	90.00	\$28.49	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.64	\$59.89
19-24 months	95.00	\$30.08	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.23	\$62.27
25-30 months	100.00	\$31.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.64

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA,
 ATHENS, AUGLAIZE, BELMONT, BROWN,
 BUTLER, CARROLL, CHAMPAIGN, CLARK,
 CLERMONT, CLINTON, COLUMBIANA,
 COSHOCTON, CRAWFORD, DARKE, DEFIANCE,
 DELAWARE, ERIE, FAIRFIELD, FAYETTE,
 FRANKLIN, FULTON, GALLIA, GREENE,
 GUERNSEY, HAMILTON, HANCOCK, HARDIN,
 HARRISON, HENRY, HIGHLAND, HOCKING,
 HOLMES, HURON, JACKSON, JEFFERSON,

KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate

Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 3
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : LCN01-2023ibBldgHevHwy3

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Truck Driver CLASS 3 Articulated Dump Trucks; Ridge-Frame Rock Trucks; Distributor Trucks)	\$32.66		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.81	\$66.14
Apprentice	Percent											
First 6 months	80.00	\$26.13	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.28	\$56.34
7-12 months	85.00	\$27.76	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.91	\$58.79
13-18 months	90.00	\$29.39	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.54	\$61.24
19-24 months	95.00	\$31.03	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.18	\$63.69
25-30 months	100.00	\$32.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.81	\$66.14

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE,

GUERNSEY, HAMILTON, HANCOCK, HARDIN,
HARRISON, HENRY, HIGHLAND, HOCKING,
HOLMES, HURON, JACKSON, JEFFERSON,
KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE,
WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

SECTION 01110 - SUMMARY OF WORK

PART I - GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

B. PROJECT DESCRIPTION

1. The following general description of the work is intended to be an aid to the prospective bidder and is not intended to comprise a complete description of all work required. The Work includes all work indicated or implied by the Contract Documents, which includes the Drawings, this Project Manual, the Contract, all Addenda, executed Change Orders, or other amendments to the Contract.
2. The Project consists of A New Addition for the Miami County Sheriff Tactical Vehicle Storage Facility, as shown on Contract Documents prepared by WDC Group, dated April 12, 2024.
3. The Work consists of the necessary demolition of existing building, site work including rough & final grading, asphalt paving patching, concrete foundation and slab, construction of a 2,000 square foot post frame addition to an existing storage building, install overhead door and metal siding and roof. Mechanical and electrical systems are included.

C. WORK SEQUENCE

1. The contractor shall coordinate materials orders, deliveries, approvals, inspections, etc., as required to achieve the intent of the contract documents.

D. CONTRACTOR USE OF PREMISES

1. General: During the construction period the Contractor shall have full use of the premises for construction operations, including use of the site. The Contractor's use of the premises is limited only by the Owner's right to perform construction operations with its own forces or to employ separate contractors on portions of the project.

E. OWNER-FURNISHED ITEMS

1. The Owner will provide furniture, lockers, and etc. for office areas and equipment for maintenance shop production processes. The Work includes providing support systems to receive Owner's equipment, and mechanical and electrical connections.
 - a. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.
 - b. If Owner-furnished items are damaged, defective or missing, the Owner will arrange for replacement. The Owner will also arrange for manufacturer's field services, and the delivery of manufacturer's warranties and bonds to the Contractor.
 - c. The Contractor is responsible for designating the delivery dates of Owner-furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner- furnished items at the site. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to the elements, and to repair or replace items damaged as a result of his operations.

END OF SECTION 01110

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SECTION 01210 - ALLOWANCES

PART I - GENERAL

- A. RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. SUMMARY: This Section specifies administrative and procedural requirements governing handling and processing allowances. Types of allowances required include the following:
 - 1. Lump sum allowances.
- C. ALLOWANCES
 - 1. The allowances shall cover the cost to the contractor, less any applicable trade discount, of the materials and equipment, required by the allowance, delivered at the site and all applicable taxes.
 - 2. The Contractor's costs for unloading and handling on site, labor, installation costs, overhead and profit, and other expenses contemplated for the original allowance shall be included in the contract sum and not in the allowance, unless the allowance schedule specifically states otherwise.
 - 3. Whenever the cost is more or less than the allowance, The Contract Sum shall be adjusted accordingly by change order, the amount of which will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses.
- D. SELECTION AND PURCHASE
 - 1. At the earliest feasible date after Contract award, advise the Architect of the date when the final selection and purchase of each product or system described by an allowance must be completed in order to avoid delay in performance of the Work.
 - a. When requested by the Architect, obtain proposals for each allowance for use in making final selections; include recommendations that are relevant to performance of the Work.
 - b. Purchase products and systems as selected by the Architect from the designated supplier.

PART II - PRODUCTS (Not Applicable)

PART III - EXECUTION

- A. INSPECTION
 - 1. Inspect products covered by an allowance promptly upon delivery for damage or defects.
- B. PREPARATION
 - 1. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related construction activities.
- C. SCHEDULE OF ALLOWANCES
 - 1. **ALLOWANCE No. 1:** The 1A - General Work & Labor Contractor shall include in his proposal One Hundred (100) hours for one laborer and One Hundred (100) hours for carpenter to work at the discretion of the Owner during the construction period of the project.
 - 2. **ALLOWANCE No. 2:** The 1A - General Contractor shall include an allowance for TEN (10) 30-cubic-yard dumpsters for use by the Contractor and Owner during construction. Each dumpster shall remain on site until filled at no additional cost to the Owner. A unit price (dumpster) shall be included for calculation of add/deduct change order for differing quantity.

3. **ALLOWANCE No. 4:** The 15B - Mechanical Contractor shall include in his proposal FIFTY (50) hours for one skilled mechanical and FIFTY (50) hours for one general laborer to work at the discretion of the Owner during the construction period of the project.
4. **ALLOWANCE No. 5:** The 16A - Electrical Contractor shall include in his proposal FIFTY (50) hours for one skilled electrician and FIFTY (50) hours for one laborer to work at the discretion of the Owner during the construction period of the project.
5. **ALLOWANCE No. 6:** The 16A - Electrical Contractor shall include in his proposal \$10,000 to use at the discretion of the Owner during the construction period of the project.

END OF SECTION 01210

SECTION 01230 – ALTERNATES

PART I - GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section specifies administrative and procedural requirements for Alternates.
2. Definition: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents.
3. Coordination: The Alternate bid shall include cost to coordinate related Work and modify or adjust adjacent Work as necessary to ensure that Work affected by each accepted Alternate is complete and fully integrated into the project.
4. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.
5. Schedule: Alternates for each bid package are listed in respective proposal schedules in Section 00400 "Bid Form". Specification Sections referenced in the Schedule contain requirements for materials and methods necessary to achieve the Work described under each Alternate. Look for more information about alternates on the Drawings and in related Specification sections.

PART II - PRODUCTS (NOT APPLICABLE)

PART III - EXECUTION

- #### A. **BASE BID** Project as drawn and specified.

B. SCHEDULE OF ALTERNATES

1. **ALTERNATE #1 – INTERIOR METAL LINER:** Provide material, equipment, and labor to install interior metal liner on ceiling and walls.

END OF SECTION 01230

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SECTION 01250 - CHANGE ORDER PROCEDURES

PART I - GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

B. SCOPE

1. This section shall establish procedures for the submission of change order proposals.

C. CHANGE ORDERS

1. Change Orders may also be known as “contract Amendments”. The two terms may be used interchangeably with the same meaning.
2. Changes in the work involving an adjustment in the contract price shall be authorized by a written change order signed by the owner.

D. PROCESSING PROCEDURE

1. Upon the determination of the Architect that extra work beyond that indicated on the drawings and/or specifications, or that certain portions of the work will be deleted from the Contract, the contractor shall submit a Change Order Proposal to the Architect/Construction Manager for review.
2. Upon acceptance of the Change Order Proposal, the Architect will prepare copies of the Change Order and obtain the necessary signatures of the contractor and owner indicating acceptance of the amendment of the contract AIA Form G701 Change Order will be the documents used.
3. Copies of the Change Order will be distributed by the Architect to the Owner and Contractor, Architect and other agencies or individuals as required.

E. CHANGE ORDER PROPOSALS

1. The Change Order Proposal shall be itemized in a detailed breakdown of the costs or credits resulting from the changes to show the following:
 - a. Quantities and cost of materials F. O. B. job-site.
 - b. Costs of Labor:
 - (1) Include break-down of man hours and hourly rates for each trade and trade classification involved.
 - (2) Direct costs:
 - (a) Including purchase and rental value of fuel, supplies, scaffolding, construction equipment, power tools, etc.
 - (3) Subcontractors work and cost thereof.
 - (4) Overhead
 - (5) Profit
 - c. Proposals may be either “Add” or “Deduct” types as necessary to cover the change.
 - d. When change order proposals include an add and/or deduct as part of the same change, one overhead and one profit figure shall be used for the net total change in cost. Overhead and profit figures shall be based on the following table:
 - (1) ADD type of change orders shall not exceed the following:
 - (a) OVERHEAD = 10%
 - (b) PROFIT = 6%
 - (2) DEDUCT type of change orders shall provide credit to the Owner for work or material not being supplied as well as the overhead and profit associated with the items.
 - (a) OVERHEAD = 10%
 - (b) PROFIT = 6%

- (3) Overhead includes general office operating costs that are not direct costs related to the project. Overhead shall include the following: Bond premiums, supervision, superintendence, wages of timekeepers, watchmen and clerks, small tools, incidentals, general office expense, company insurance, Worker's Compensation Insurance, office rental or operating costs, company vehicles and/or equipment, and all other expenses not included in "Cost". Overhead shall also include Performance-Payment Bond cost associated with the contract amendments.

END OF SECTION 01250

SECTION 01290 - APPLICATIONS FOR PAYMENT

PART I – GENERAL

- A. RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. SUMMARY: This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payments.
- C. SCHEDULE OF VALUES
 - 1. Coordinate preparation of the Schedule of Values as follows: The Schedule of Values shall be prepared in such a manner that each major item of Work and each subcontracted item of Work is shown as a single item of A.I.A. Document G703 "Application and Certification for Payment, Continuation Sheet".
 - a) Correlate line items in the Schedule of Values with:
 - (1) Logical divisions of work. Use the Construction Schedule (00300), list of subcontracts, and specification divisions as a guide to logical divisions of work to list as line items. Separate each into "material" and "labor."
 - (2) Application for Payment form.
 - (3) List of subcontractors.
 - (4) Schedule of allowances.
 - (5) Schedule of alternates.
 - (6) Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.
 - b) Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed (per the AIA G703 document):
 - (1) Generic name.
 - (2) Change Orders (numbers) that have affected value.
 - (3) Dollar value.
 - (4) Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.
 - c) Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.
 - d) Labor shall be listed as a line item for each major item of work and total value for that portion of work.
 - e) For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 - f) Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total value of that part of the work.
 - g) In addition to the Contractor's construction activities, the Contract Cost Breakdown must include the following line items with the associated percentage of the contract value allocated to the activity;
 - (1) Progress Meeting Attendance – 1%
 - (2) Record Drawing Updates – 1%
 - (3) Bonds: Insurance, permits and tests

- (4) Mobilization
 - (5) Demobilization
 - (6) Submittals in the amount of 2% of the Contract; however, not less than \$1,000.00 or more than \$15,000.00.
 - (7) Daily clean up (in the amount of 1% of the total contract)
 - (8) Closeout in an amount equal to 5% of the Contract amount; 3% will be used for punch list and 2% for closeout documents.
- h) Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.

D. APPLICATIONS FOR PAYMENT:

1. When requested by the Owner, each Contractor shall prepare an Application for Payment schedule showing approximate progress payment amounts per month for their branch of the work for the life of the project.
2. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
 - a) The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
3. Payment Application Times: Pay Applications shall be submitted no more than once per month.
4. Payment Application Forms: Use both the AIA Document G702 and Continuation Sheets G 703 as the forms for Application for Payment, Releases of Liens, and Certified Payroll Reports.
5. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
 - a) Entries shall match data on the Schedule of Values and Construction Schedule. Use updated schedules if revisions have been made.
 - b) Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
 - c) The Contractor shall provide separate subtotals for labor, and total for labor for the work completed during the period for each Application for Payment and for the total scheduled value of the work.
 - d) The Contractor shall provide separate subtotals for materials, and total material for the work completed during the period for each Application for Payment and for the total scheduled value of the work.
6. Transmittal: Submit one electronic 'pencil' Application for Payment to the Architect prior to submitting the original Application for Payment. Architect must approve before original Application of Payment is submitted. Upon approval of the 'pencil' copy, Contractor shall electronically submit original Application for Payment to Architect.
7. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from Contractor and all other entity who may lawfully be entitled to file a mechanics lien arising out of the Contract, and related to the Work covered by the payment.
 - a) Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
 - b) When an application shows completion of an item, submit final or full waivers.
 - c) The Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - d) Waiver Forms: Submit waivers of lien on waivers provided, executed in a manner acceptable to Owner.

8. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:
 - a) List of subcontractors.
 - b) Schedule of Values. (G703)
 - c) Certificates of insurance and insurance policies.
 - d) Performance and payment bonds (if required).
9. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:
 - a) Completion of Project Closeout requirements.
 - b) Assurance that unsettled claims will be settled.
 - c) Assurance that Work not complete and accepted will be completed without undue delay.
 - d) Proof that tax, fees and similar obligations have been paid.
 - e) Removal of temporary facilities and services.
 - f) Removal of surplus materials, rubbish and similar elements.
 - g) Final cleaning.

END OF SECTION 01290

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SECTION 01310 - PROJECT MEETINGS

PART I - GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
 - a. Pre-Construction Conference.
 - b. Coordination Meetings.
 - c. Progress Meetings.

C. GENERAL

1. The Architect will record meeting results and distribute copies to each Contractor. Respective Contractors shall be responsible for notifying other parties (e.g. suppliers, sub-contractors) that are affected by decisions or actions resulting from each meeting.

D. PRE-CONSTRUCTION CONFERENCE

1. A pre-construction conference and organizational meeting at the Project site or other convenient location will be scheduled after execution of the Agreements and prior to commencement of construction activities to review responsibilities and personnel assignments.
2. Attendees: The Owner, Architect and their consultants, Prime Contractors and their superintendents, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work. If a contractor has been awarded multiple prime bid packages, then representatives from each bid package shall attend meetings also.
3. Agenda: Discuss items of significance that could affect progress including such topics as:
 - a. Tentative construction schedule.
 - b. Critical Work sequencing.
 - c. Designation of responsible personnel.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for processing Applications for Payment.
 - f. Distribution of Contract Documents.
 - g. Submittal of Shop Drawings, Product Data and Samples.
 - h. Preparation of record documents.
 - i. Use of the premises.
 - j. Office, Work and storage areas.
 - k. Equipment deliveries and priorities.
 - l. Safety procedures.
 - m. First aid.
 - n. Security.
 - o. Housekeeping.
 - p. Working hours.

E. COORDINATION MEETINGS

1. The Architect will conduct Project coordination meetings as required at times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.
2. Representation at each weekly construction meeting shall consist of one or more individuals from each trade, subcontractor, and from those parties that are currently involved in coordination or planning for the construction activities at a two week lead time.

F. **WEEKLY PROGRESS MEETINGS**

1. Progress meetings will be established and held on a minimum weekly basis, or more frequent as determined by the Architect, to review the progress of construction, possible delays, problems, and projected construction activity. The Contractor is required to attend all progress meetings with his subcontractors. Contractors failing to be represented at project meetings and/or failing to have subcontractors attend meetings will be taken into consideration when the Architect is considering payment applications for approval. Contractors may be charged \$250.00 for each unexcused absence. A contractor is considered present at a weekly progress meeting when the attendee can make financial and scheduling decisions at each meeting for their specific trade, company, subcontractor, etc. If the attendee cannot make such decisions the contractor will be considered absent from said weekly progress meeting. A deduct Change Order for these charges will be issued prior to project closeout. This in no way relieves the Contractors for coordination due to lack of attendance. Punitive damage claims may be made by the Owner in addition to fees charged.
 - a. Notice of said meetings will originate in the office of the Architect.
 - b. The Contractor shall require his principal subcontractors to attend.
 - c. The progress and schedule of each involved Contractor shall be coordinated at this meeting. The representatives of the Contractor present shall have the authority to change the Contractors work schedule or authorize work with the consent of the Architect. If the Contractor fails to attend this meeting, it shall be his responsibility to obtain the information discussed at the meeting. Meeting notes and the most current construction schedule will be in the office of the Architect. Attendance at these meetings is required for regular certification of Contractors' payments by the Architect.
 - d. Contractor shall coordinate dates of meetings with preparation of payment requests.

END OF SECTION 01310

SECTION 01330 - SUBMITTALS

PART I- GENERAL

- A. SCOPE: This Section specifies administrative and procedural requirements for submittals of the following:
1. Shop Drawings.
 2. Product Data.
 3. Samples.
 4. Schedules.
 5. Reports, print information, certification, warranties, and other submittals required in submittal schedule.
 6. Additional materials.
- B. ADMINISTRATIVE SUBMITTALS: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. See Schedule of Submittals below and Project Closeout Section.
- C. SUBMITTAL PROCEDURES
1. Procedure: Transmit each submittal with transmittal, sufficiently in advance of scheduled activities to avoid delay. Coordinate with other related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination. Allow sufficient review time so that installation will not be delayed, including time for re-submittals. When requested by the Architect, the Contractor will provide additional submitted items to meet the requirement of this section.
 2. Submittal Identification: Submittals shall be identified with the following information as applicable:
 - a) Project name and location.
 - b) Date.
 - c) Name and address of Architect.
 - d) Name and address of Contractor.
 - e) Name and address of subcontractor.
 - f) Name and address of supplier.
 - g) Name of manufacturer(s).
 - h) Drawing number and detail references, as appropriate.
 - i) Identify Specification Section, Identification of item on Drawings and schedule, and locations at which material or equipment are to be installed.
 - j) Contractor employee name and signature denoting their approval of submittal.
- D. SHOP DRAWINGS FOR CUSTOM FABRICATED ITEMS: Submittals shall be in electronic format. Each submittal shall have a blank space of at least 4" x 8" on the right hand side for architects stamps and notes. Each submittal shall include a transmittal from the prime contractor with the applicable information noted above. After review the Architect will return to Contractor. Submittals returned "Revise and Resubmit" shall have original drawing corrected and resubmitted. Reproductions of Architect's Drawings are acceptable as Shop Drawings only when specifically authorized in writing by the Architect.
- E. SHOP DRAWINGS FOR STANDARD MANUFACTURED ITEMS: Submittal may be in form of manufacturer's printed catalog sheets showing illustrated cuts of items to be provided, scale details, sizes, dimension, performance characteristics, capacities, wiring diagrams, and controls and other pertinent information. Extraneous information not pertinent to this project to this project shall be deleted from submittal. Such shop drawings shall be bound together with index sheet listing each sheet in binding and having a blank space at least 4" x 8" for architects stamps and notes. ALL submittals must be 3-hole punched and submitted with a three-ring binder, folder, etc that will hold all submittals for each respective contractor. Colors for these are as follows: GW&L: White, Site Work: Black, Overhead Doors: Yellow, Plumbing: Blue, HVAC: Green, Electrical: Red. Minimum 6 copies.

- F. **PRODUCT DATA:** Collect Product Data into a single submittal for each element of construction or system. Product Data may include printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings." Mark each copy to indicate choices and options applicable to this project. Minimum 6 copies.
- G. **INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS:** Collect manufacturer's printed installation, operation, and maintenance instructions. Minimum 6 copies.
- H. **NUMBER OF COPIES AND DISTRIBUTION**
1. Contractor shall furnish copies of final submittals to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities.
 2. Architect shall distribute submitted copies of shop drawings (see par. 1.4) , product data, and maintenance instructions, etc. as follows: Submit minimum of 6.
 - 1 - Architect
 - 1 - Consulting Engineer
 - 1 - Construction manager
 - 1 - Owner/project manual
 - 1 - Job site
 - Additional copies - Contractor, with Architect's Action Stamp
- I. **SAMPLES:** Submittals shall bear clear identification as to manufacturer, product, type, color, range, texture, finish, and other identifying data. Samples shall not be used in work and shall remain in the Architect's possession until completion of work, unless otherwise specified. Contractor shall remove samples upon request. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern. Samples must be submitted with the product data and shop drawings.
- J. **ARCHITECT'S ACTION:**
1. Action Stamp: Submittals will be reviewed with the following actions:
 - a) Submittals marked "Reviewed, No Exceptions Noted," indicates the submittal appears to conform to the design concept of the Work, and that the contractor at his discretion may proceed with fabrication and/or procurement and installation.
 - b) Submittals marked "Reviewed, Exceptions Noted," indicates that the submittals, after noted corrections are made, appear to conform to the design concept of the Work, and the contractor at his discretion may proceed with fabrication and/or procurement and installation.
 - c) Submittals marked "Revise and Resubmit," indicate that the submittal does not appear to conform to the design concept and a resubmission is required.
 - d) Submittals marked "Rejected" indicate that the submittal has been rejected.
 - e) Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".
- K. **EXTRA MATERIALS:** Deliver all extra materials specified to the Owner's warehouse. Arrange for deliver with the Owner. Send receipt/transmittal with Owner's signature to the Architect.
- L. **SCHEDULE OF SUBMITTALS:** Refer to the following letter key in the "SUBMITTALS REQUIRED" column of the Schedule of Submittals below.
- a. Shop drawings. (See par. 1.4 and 1.5)
 - b. Catalog cuts, product data.
 - c. Color samples.
 - d. Product samples.
 - e. Typed Statement or information.

- f. Typed verification of compliance with certification requirements.
- g. Installation, operation and maintenance instructions.
- h. Schedules.
- i. Warranties.
- j. Additional materials.

* See respective specification section(s) for additional and more specific submittal requirements.

REF.	ITEM OR SECTION	SUBMITTALS REQUIRED
POST "AWARD OF CONTRACT" SUBMITTALS		
	Contractor's Insurance Certificates	
	Complete equipment, material and subcontract list. (within 10 days after Award of Contract)	
	Performance Bond (if required. & not submitted with bid)	
	Schedule of Values (AIA G703)	
	Applications for Payment (AIA G702, G703)	
	Contractor's and Sub-contractor's licenses to perform work within applicable governmental jurisdictions.	
MATERIALS SUBMITTALS		
02060	Building Demolition	E, H
02226	Excavation and Backfilling	B, E, F
02300	Earthwork	B, D, E, F
02511	Hot-Mixed Asphalt Paving	B, E, F, G, I
02900	Landscaping	B, D, E, G, I
03300	Cast-in-Place Concrete	B, E, G, I
05500	Miscellaneous Metal	B, C, D, E, I
06100	Rough Carpentry	F, I
07200	Insulation	F, I
07270	Weather Barriers	B, F
07600	Flashing and Sheet Metal	B, D, F, I
07900	Sealants	B, C, D, F, I
08110	Hollow Metal Doors and Frames	A, B, F, I
08360	Sectional Overhead Doors	A, B, C, D, E, F, G, H, I
08710	Door Hardware	A, B, F, I

09910	Painting	B, C, F, I
10520	Fire Extinguishers and Cabinets	A, B, F, I
13554	Pre-Engineered Wood Frame Building	A, B, C, D, E, F, G, H, I, J
DIV 15		As required per individual specification sections
DIV 16		As required per individual specification sections
CLOSE-OUT SUBMITTALS		
	CONTRACTOR'S FORM OF GUARANTEE	
	FINAL, CONTRACTOR'S, SUB-CONTRACTORS' AND SUPPLIERS' AFFIDAVITS OF RELEASE OF LIENS	
	CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS, AIA G706.	
	CONTRACTOR'S LETTER STATING WORK IS COMPLETE, AND FINAL APPLICATION FOR PAYMENT	
	FINAL SUMMARY OF CHANGE ORDERS.	
	FINAL PUNCH LIST, CERTIFIED COMPLETE.	
	CONSENT OF SURETY TO FINAL PAYMENT, AIA G707.	
	EVIDENCE OF FINAL, CONTINUING INS. COVERAGE AS SPEC'D.	
	RECORD DOCUMENTS NOTATIONS (MAINTAINED BY GENERAL CONTRACTOR)	
	CERTIFICATION OF INSPECTION BY CONCERNED GOVERNMENT AGENCIES AND "PERMIT" SET OF CONTRACT DOCUMENTS, IF REQUIRED.	
	MISCELLANEOUS SPECIFIED GUARANTEES WHEN IN EXCESS OF ONE YEAR.	
	RECEIPTS FOR SPECIFIED ADDITIONAL MATERIALS DELIVERED TO THE OWNER.	
	CERTIFICATE OF SUBSTANTIAL COMPLETION, ISSUED BY ARCHITECT.	
	3-RING BINDER LABELED AND IDENTIFIED WITH ALL MANUFACTURER'S MAINTENANCE, OPERATING, AND INSTALLATION MANUALS, CATALOG CUTS, RECEIPTS FOR EXTRA MATERIAL DELIVERED TO THE OWNER	

END OF SECTION 01330

SECTION 01500 - TEMPORARY FACILITIES

PART I - GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
 - a. Electric: The Owner shall provide electric service from the existing building and allow usage of electric by all contractors. Owner will pay for usage. Wiring to point of use shall be by the Contractor. Each contractor shall provide his own additional electrical needs by portable generator.
 - b. Toilet: The Owner will allow existing toilet facilities onsite to be used by contractors and related personnel for the duration of the project. Contractor will be required to thoroughly clean all restrooms at the end of the project.
 - c. Water: Owner shall provide tap water at a source which he shall designate. Piping to a point of use shall be by Contractor. Contractor shall provide drinking water.
 - d. Temporary Heat: Contractor shall provide his own temporary heat as required for timely completion of his Work per the construction schedule.
 - e. Contractor shall provide temporary barricades, warning lights, etc. for hazardous conditions created by his work. Contractor shall provide all such protections related to the total project conditions.
 - f. First Aid Supplies: Each contractor is required to maintain on site their own First Aid Supplies. Comply with governing regulations.
 - g. Each contractor shall provide temporary measures to protect their materials and installed equipment against rain, water, weather, etc. as required.
 - h. Contractor shall provide signage at the jobsite and to the jobsite, assisting and directing all deliveries to the grandstand.
 - i. Fence: The 1A – GW&L Contractor shall remove portions of the existing fence to allow themselves to construct the new building addition. Upon removal of fence, the 1A – GW&L Contractor shall install temporary fence to complete the enclosure of the outside storage area. The temporary fence shall be removed only after the new permanent fence is in place.

PART II - PRODUCTS

A. MATERIALS

1. General: Provide new or used materials, acceptable to the Architect. Previously used material shall be undamaged and in serviceable condition. Provide materials suitable for the use intended.

B. EQUIPMENT

1. General: Provide new or used equipment, acceptable to the Architect. Previously used equipment shall be undamaged and in serviceable condition. Provide equipment suitable for use intended.

PART III - EXECUTION

A. INSTALLATION

1. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
2. Provide each facility ready for use when needed to avoid delay. Maintain and modify as

required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

B. TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

1. Barricades, Warning Signs and Lights: As required by trade, Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
 - a. Storage: As required by trade, Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
2. Environmental Protection: Each prime Contractor shall Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

C. COLLECTION AND DISPOSAL OF WASTE

1. Collect and dispose of waste from construction areas and elsewhere daily. Comply with requirements of NFPA for removal of combustible waste material and debris. Strictly enforce requirements. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
 - a. Clearance restrictions at the site may prohibit the use of large and/or front-end loaded dumpsters.
 - b. Contractor shall supply their own cleaning equipment, dumpsters and barrels. No use of similar Owner items is permitted.
2. Waste Disposal Facilities: Provide sufficient containers for collection of waste materials, debris, and rubbish will be permitted only in the Contractor's approved areas and must be provided by the Contractor. The type of dumpster and method of disposal shall be determined by the Contractor.
 - a. As a minimum, provide:
 - (1) Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
 - (2) Separate dumpsters for each category of recyclable.
 - (3) Recycling bins at worker lunch area.
 - b. Provide containers as required.
 - c. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
 - d. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse project construction waste materials if possible.
 - e. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - f. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
3. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
4. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
5. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
6. Disposal Operations:

- a. Promptly and legally transport and dispose of removed and demolished items and waste materials that are not identified-d to be recycled or reused.
 - b. Do not burn, bury or otherwise dispose of rubbish and waste materials on project site.
 - c. Aggregating material and/or hauling it off site shall not occur between the hours
7. Provide waste collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

D. DISPOSAL OF DEMOLISHED MATERIALS

1. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - a. Do not allow demolished materials to accumulate on-site.
 - b. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - c. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
2. Burning: Do not burn demolished materials.
3. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 01500

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SECTION 01600 - MATERIALS AND EQUIPMENT

PART I - GENERAL

- A. RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. SUMMARY
1. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
 - a. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each prime Contractor.
 2. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
 3. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.
 4. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."
- C. DEFINITIONS
1. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.
 - a. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - (1) "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, which is current as of the date of the Contract Documents.
 - (2) "Foreign Products", as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.
 - b. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - c. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
- D. SUBMITTALS
1. Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Architect. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.
 - a. Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.
 - b. Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:
 - (1) Related Specification Section number.
 - (2) Generic name used in Contract Documents.
 - (3) Proprietary name, model number and similar designations.
 - (4) Manufacturer's name and address.
 - (5) Supplier's name and address.
 - (6) Installer's name and address.

- (7) Projected delivery date, or time span of delivery period.
- c. Initial Submittal: Within 30 days after date of commencement of the Work, submit 3 copies of an initial product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 - (1) At the Contractor's option, the initial submittal may be limited to product selections and designations that must be established early in the Contract period.
- d. Completed Schedule: Within 60 days after date of commencement of the Work, submit 3 copies of the completed product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
- e. Architect's Action: The Architect will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect's response will include the following:
 - (1) A list of unacceptable product selections, containing a brief explanation of reasons for this action.

E. QUALITY ASSURANCE

1. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
 - a. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.
2. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - a. Each prime Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate Contractors.
 - b. If a dispute arises between prime Contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.
3. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:
 - a. No available domestic product complies with the Contract Documents.
 - b. Domestic products that comply with Contract Document are only available at prices or terms that are substantially higher than foreign products that also comply with the Contract Documents.
4. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturers or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view in occupied spaces or on the exterior.
 - a. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
 - b. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - (1) Name of product and manufacturer.
 - (2) Model and serial number.
 - (3) Capacity.

- (4) Speed.
- (5) Ratings.

F. PRODUCT DELIVERY, STORAGE, AND HANDLING

1. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 - a. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - b. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 - c. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 - d. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 - e. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - f. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 - g. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART II -PRODUCTS

A. PRODUCT SELECTION

1. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
 - a. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 - b. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
2. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
 - a. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.
 - b. Semi proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
 - (1) Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 - c. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 - d. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of

- a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
- e. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - (1) Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
 - f. Compliance with Standards, Codes and Regulations: Where the Specifications only requires compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
 - g. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - (1) Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
 - h. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.
 - i. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division-1 for allowances that control product selection, and for procedures required for processing such selections.

PART III -EXECUTION

A. INSTALLATION OF PRODUCTS:

- 1. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 - a. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01600

SECTION 01630 - SUBSTITUTIONS

PART I - GENERAL

- A. RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. SCOPE: This section covers the submission for approved equivalents (or equals) and substitutions. The terms "or equivalent" and "or equal" have the same meaning in these specifications.
- C. APPROVED EQUIVALENTS (OR EQUALS) AND SUBSTITUTIONS
 1. Any item specified by reference to the Commercial Standard, Federal Specification, trade association standard, or other similar standard shall comply with the requirements for design, manufacturer, and installation of the latest revision thereto in effect on the date of the Advertisement or Invitation for Bids. Where this specification requires a better quality than such standard, the better standard shall govern.
 2. Where a proprietary material or method is specified for one use, the intention is to establish a standard of quality, performance, or size and not to exclude another product of equivalent or better merit.
 3. For items specified as a proprietary material or method (i.e. manufacturer, cat. no., or licensed process), bids shall be based on the items named in the specification or on items which the architect designates **by addendum** as an approved equivalent (or equal). An item named in the specifications or by addendum will be acceptable only when it meets all other requirements of the specifications, including specifications of the manufacturer as of the date of the Advertisement or Invitation for Bids. Requests for approval of an item as equivalent will not be considered unless sufficient data for evaluation is received by the Architect. The Architect will consider delivery time and availability of service as well as the product itself in acting on a request for approval under provisions of this paragraph.
 4. Prior approval submittal procedure: Requests for approval of materials and/or equipment as an approved equivalent to those named in the specifications may be made by application to the Architect as follows:
 - a. Submit requests in duplicate.
 - b. Brochures with complete information, tests, etc., to demonstrate equality of product to that specified and/or detailed.
 - c. Contractor must submit any product not specified a minimum of ten days before the bid date to Architect in order for product to be considered for approval. The Architect will notify Contractor in writing of decision to accept or reject the request.
 - d. Prior to the bid date, a list of any additional "approved equivalent (equal)" materials and/or equipment will be sent to all holders of bid documents by addendum.

PART II- PRODUCTS (not applicable)

PART III- EXECUTION (not applicable)

END OF SECTION 01630

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SECTION 01710 - CLEANING

PART I - GENERAL

A. RELATED DOCUMENTS

1. The Work of this Section shall be included as a part of the Contract Documents of each Contractor on this project. Where such Work applies to only one Contractor, it shall be defined as to which Contractor the work belongs.
2. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
3. Section 01500 - Temporary Facilities

B. SCOPE

1. ATTENTION ALL CONTRACTORS: This section covers the project cleaning during construction and just prior to acceptance of the building.

C. SUMMARY

1. The Architect reserves the right to act on behalf of the Owner pertaining to the clean-up responsibilities that are a part of each Contractor's Work.
2. Each prime contractor is responsible for cleaning his own Work. The General Work & Labor (1A) Contractor is responsible for coordinating cleaning of an area or piece of equipment where more than one Contractor is involved.
3. Related Work Specified Elsewhere:
 - a. Section 01770 – Closeout Procedures
 - b. Special cleaning requirements for specific construction elements are included in appropriate sections of Division 2 through 16.

D. PURPOSE – DAILY CLEANING

1. Define and emphasize the responsibility of Contractor to remove his rubbish and debris from the construction site to guard against fire and safety hazards as well as to provide a more efficient construction operation for all Contractors. If this cleaning is not performed to the satisfaction of the Owner and the Architect, it will be performed for the contractor at his expense, cost of which will be deducted by Change Order prior to final payment.

E. PURPOSE – ROUTINE CLEANING

1. Each Friday afternoon, and more often if necessary, Contractor shall perform an overall clean up of the entire site, including a broom cleaning of appropriate surfaces. The trades shall remove their rubbish and debris from the building site to the rubbish collection location promptly upon its accumulation and in no event later than the Contractor's regular Friday general clean up.

F. RUBBISH CONTAINMENT

1. Refer to Section 01500 – Temporary Facilities for requirements.

G. SAFETY REQUIREMENTS

1. Hazards Control
 - a. Store volatile wastes in covered metal containers, and remove from premises daily.
 - b. Prevent accumulation of wastes that create hazardous conditions.
 - c. Provide adequate ventilation during use of volatile or noxious substances.
2. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - a. Do not burn or bury rubbish and waste materials on project site.
 - b. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - c. Do not dispose of wastes into streams or waterways.

PART II - PRODUCTS

A. MATERIALS

1. Cleaning Agents: Use only cleaning materials recommended by manufacturer of surface to be cleaned.
 - a. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finish surface.

PART III - EXECUTION

A. DAILY CLEANING

1. Contractors shall execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
2. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
3. Daily, during progress of work, clean site and public properties and dispose of waste materials, debris, and rubbish in dumpster type rubbish container provided under this section.
4. All streets, alleys, sidewalks, and adjacent areas to the site shall be free of mud, dirt, dust, gravel, or any other material that was caused to exist due to the construction of this project. Any and all material must immediately be cleaned to the satisfaction and approval of the Architect and the Owner.
 - a. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
 - b. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process do not fall on wet, newly painted surfaces.
5. Place no new work on dirty surfaces.
6. During construction, each contractor and/or subcontractor, shall be responsible for daily cleaning up and removing from the building and site any boxes, excess materials, and other debris caused by his work which is easily assignable to the respective contractor or subcontractor. The debris shall be removed from the site by each contractor or it may be placed in the trash receptor per Section 01500. The construction site must be kept in a clean, neat, and safe state.
7. Each Contractor shall dispose of the trash from the site each day as required.
8. Failure of a Contractor to complete these cleaning requirements may result in back-charges to the negligent Contractor, as determined by the Architect.

B. ROUTINE CLEANING

1. Employ experience workmen for cleaning.
2. Remove dirt, mud, and other foreign materials from sight exposed interior and exterior surfaces.
3. Weekly, or at more frequent intervals, if work activities justify same, perform the following cleaning. This includes all dirt, dust, and debris not identifiable as part of a Contract. Broom clean floor and paved surfaces; rake clean other surfaces of ground.
4. Maintain cleaning throughout the duration of the Project.
5. Should the Contractor fail in the performance of this Work, the Owner may perform such Work in accordance with Article 3 of the General Conditions.
6. Restrooms are to be cleaned each week during construction.

C. FINAL CLEANING

1. Each contractor and/or subcontractor shall make a special effort to remove all debris caused by his work and to clean any soiling he has caused to the work of others.
2. Thereupon, each Contractor shall make the final clean-up which shall include at least the following:
 - a. All finish surfaces shall be cleaned and dusted removing any soiling, hand prints, or marks.
 - b. Removal of any and all remaining, miscellaneous construction debris from the site.

3. Provide final cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
4. Each Contractor shall perform his respective final clean up and shall leave the Work of the completed project in clean, neat condition.
5. The following are examples, but not by way of limitation, of cleaning levels required:
 - a. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
 - b. Clean project site (yard and grounds), including landscape development areas of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petro-chemical spills, and other foreign deposits. Rake grounds, which are neither planted nor paved, to a smooth, even textured surface.
 - c. Sweep paved areas broom clean. Rake grounds that are neither paved nor planted to a smooth, even textured surface.
 - d. Remove petrochemical spills, stains, and other foreign deposits.
 - e. Remove tools, construction equipment, machinery, and surplus materials from the site.
 - f. Remove labels that are not required as permanent labels.
 - g. Clean transparent materials, including mirrors and window/door glass to a polished condition, removing substances that are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent material.
 - h. Clean exposed exterior and interior hard-surfaced finishes, to a dirt-free condition, free of dust, stains, films, and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
 - i. Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and similar equipment; remove excess lubrication and other substances.
 - j. Clean concrete floors in unoccupied spaces broom clean.
 - k. Vacuum clean carpeted surfaces and similar soft surfaces.
 - l. Clean plumbing fixtures to a sanitary condition, free of stains, including those resulting from water exposure.
 - m. Clean light fixtures and lamps so as to function with full efficiency.
6. Restrooms are to be thoroughly cleaned to look brand new at the conclusion of the project.
7. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.
8. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of lawfully.

END OF SECTION 01710

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SECTION 01770 - CONTRACT CLOSEOUT

PART I GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

A. SUMMARY

1. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - a. Inspection procedures.
 - b. Project record document submittal.
 - c. Operating and maintenance manual submittal.
 - d. Submittal of warranties.
 - e. Final cleaning.
2. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions-2 through -17.
3. All closeout documents, submittals, operation and maintenance manual, etc shall be submitted in triplicate to the Architect.

A. SUBSTANTIAL COMPLETION

1. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. The Contractor shall prepare a List of Uncompleted Items of Work to accompany such request.
 - a. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. The Application shall include an accounting of all changes to the Contract Sum.
 - b. Contractor shall submit duplicate copies of a punch list for the Owner and Architect to approve and/or add to. Upon review by both Owner & Architect and receiving a revised or approval punch list, the contractor shall resubmit the punch list. The punch list shall contain the following: room name, room number, brief description of change/revisions/additional work needed to be completed, and date when such work was completed. This shall be on a company letterhead from contractor along with project name.
 - c. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - d. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - e. Deliver tools, spare parts, extra stock, and similar items.
 - f. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
 - g. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
 - h. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
2. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the Certificate will be issued.

A. FINAL ACCEPTANCE

1. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
 - a. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required. Include accounting for final additional changes to the Contract Sum.
 - b. Submit a certified copy of the Owner / Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.
 - c. Submit consent of surety to final payment.
 - d. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
2. Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

A. RECORD DOCUMENT SUBMITTALS

1. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.
2. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set in red to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
3. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
4. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information as applicable to Contract:
 - a. Emergency instructions.
 - b. Spare parts list.
 - c. Copies of warranties.
 - d. Wiring diagrams.
 - e. Recommended maintenance schedules.
 - f. Shop Drawings and Product Data.

PART II - PRODUCTS (Not Applicable)

PART III - EXECUTION

A. CLOSEOUT PROCEDURES

1. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide

instruction by manufacturer's representatives. Include a detailed review of the following items:

- a. Maintenance manuals.
 - b. Identification systems.
 - c. Control sequences.
 - d. Cleaning.
 - e. Warranties and bonds.
 - f. Maintenance agreements and similar continuing commitments.
2. As part of instruction for operating equipment, demonstrate the following procedures:
- a. Start-up.
 - b. Shutdown.
 - c. Emergency operations.
 - d. Noise and vibration adjustments.
 - e. Safety procedures.
 - f. Economy and efficiency adjustments.
 - g. Effective energy utilization.

B. FINAL CLEANING

1. See Section 01710.

END OF SECTION 01770

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SECTION 02060 - BUILDING DEMOLITION

PART I - GENERAL

- A. Scope: This section requires removal and disposal, off site, of the following.
1. Building structure as indicated on drawings.
 2. Concrete garage slab.
 3. Building foundations to be removed in their entirety.
- B. The general provisions of the contract, including General and Supplementary Conditions and Division 0 and Division 1 - General requirements, apply to the work specified in this section.
- C. SUBMITTALS:
1. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 2. Schedule: Submit schedule indicating proposed methods and sequence fo operations for demolition work to the Architect for review prior to commencement of Work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control.
 - a. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 - b. Coordinate with Owner's continuing occupation of portions of existing building, and adjacent restaurant.
 3. Submit proposed dust and noise control measures.
 4. Revised Drawings of Project Closeout according to Division 1, Section 01770 – Closeout Procedures.
 - a. Identify and accurately locate capped utilities and other subsurface structural, electrical, and mechanical conditions.
- D. DEFINITIONS
1. Remove: Remove and legally dispose of items except those to be reinstalled, salvaged, or to remain the Owner's property.
 2. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Owner's designated storage area.
 3. Remove and Reinstall: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
 4. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
- E. JOB CONDITIONS:
1. Occupancy: Structures to be demolished will be vacated and use discontinued prior to start of work.
 2. Condition of Structures: Owner assumes no responsibility for actual condition of structures to be demolished.
 3. Explosives: Use of explosives will not be permitted.
 4. Traffic: Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - a. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required to governing regulations.
 5. Protections: Provide temporary barricades and other forms of protection as required to protect the public and the Owner's personnel from injury. Ensure safe passage of persons

around area of demolition. Conduct operations to prevent damage to adjacent buildings, structures, and other facilities and injury to persons.

- a. Provide protective measures as required to provide free and safe passage of the public and the Owner's personnel to and from occupied portions of the adjacent building.
 - b. Protect from damage, when and as directed, existing finish work that is to remain in place and becomes exposed during demolition operations.
6. Damages: Promptly repair damages caused to adjacent facilities by demolition operations.
 7. Utility Services: Maintain existing utilities indicated to stay in service and protect against damage during demolition operations. Coordinate with Owner.
 - a. Do not interrupt existing utilities serving occupied or used facilities, except when approved by the Owner.
 8. If asbestos containing materials or materials suspected of containing asbestos are encountered during the demolition work, the Contractor shall notify the Architect and Owner immediately. Asbestos containing material shall be removed and disposed of by Owner, unless noted otherwise.
 9. Environmental Controls: Use temporary enclosures and other suitable methods to limit dispersed dust and noise to lowest practical levels.
 10. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of demolition.

F. QUALITY ASSURANCE

1. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulation of authorities having jurisdiction.
2. Standards: Comply with ANSI A10.6 and NFPA 241.
3. Pre-Demolition Conference: Conduct conference at project site to comply with preinstallation conference requirements of Division 1, Section 01310 – Project Meetings.
 - a. Inspect and discuss condition of construction to be selectively demolished.
 - b. Review structural load limitations of existing structure.
 - c. Review and finalize selective demolition schedule and verify availability of progress and avoid delays.
 - d. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - e. Review areas where existing construction is to remain and requires protection.

PART II - PRODUCTS

- A. (Not Applicable)

PART III - EXECUTION

A. EXAMINATION

1. Verify that utilities have been disconnected and capped.
2. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
3. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.
4. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during demolition.

B. BID PACKAGE DESCRIPTION

1. Contractor to coordinate all work the Architect and all other contractors.
2. Contractor is responsible for mud/debris removal from all roadways deposited by this contractor and/or his subcontractors, on a daily basis or as needed.
3. Contractor to make sure any underground utilities are located and laid out prior to any digging. Coordinate layout with Architect. Also, this contractor to notify the Architect immediately if any utilities, conduit, etc. are hit during digging.
4. Contractor is responsible for capping and disconnecting all utilities required to perform the demolition back to the property line. Contractor is also required to notify/coordinate with any local authorities or utility companies prior to the demolition. Contractor is responsible to protect any utilities and poles around the property shown to remain.
5. Contractor to provide whatever temporary utilities/facilities needed to perform the work of this contract.
6. Contractor is to identify existing manholes to remain and utilize dandy bags for erosion protection on the grates to be removed at the end of the project.
7. If additional soil fill material is required for backfill, contractor is responsible for importing this material. Finish grades will need to be acceptable at the completion of the job. Coordinate final grades with Architect.
8. The Owner will provide an independent testing agency to oversee backfill and compaction.
9. This contractor is required to replace any asphalt, sidewalk, curbs, etc. that is in the city right-of-way that is damaged due to demolition or the removal/disconnection of utilities.
10. This contractor is responsible to provide a temporary 6' high chain link fence with 20' gates for protection of the site for the entire duration of the project. No work can begin until this fence is in place. See drawings for location of fence.
11. This contractor is responsible for the demolition of the buildings and all associated equipment and materials therein to an elevation of 6' below finish grade including foundations as the base bid. It is also this contractor's responsibility to backfill the entire depth of the basement of the building to match finish grade. It is this contractor's responsibility to demolish all asphalt and concrete stairs and sidewalks shown to be removed.
12. It is this contractor's responsibility to protect all trees, sidewalks, pavers, etc from damage shown to remain.
13. It is this contractor's responsibility to maintain traffic flow on all surrounding streets at all times. All streets shall remain free of dirt, mud, debris at all times. All streets and alleys shall be swept clean at the end of each day or as required.

C. DEMOLITION

1. Pollution Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in the air. Comply with governing regulations pertaining to environmental protection.
 - a. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, or pollution.
2. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.
3. Building Demolition: Demolish buildings completely and remove from site. Use such methods as required to complete work within limitations of governing regulations.
 - a. Proceed with demolition in systematic manner, from top of structure to ground. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.
 - b. Demolish concrete and masonry in small sections.
 - c. Remove structural framing members and lower to ground by hoists, derricks, or other suitable methods.
 - d. Break up and remove concrete slabs on grade, unless otherwise shown to remain.
4. Below-Grade Construction: Demolish foundation walls and other below-grade construction, including concrete slabs, to a depth of not less than 12 inches below lowest foundation level.

D. SELECTIVE DEMOLITION

1. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:
 - a. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
 - b. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small powered tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - c. Cut or drill from the exposed or finished site into concealed surfaces to avoid marring existing finished surfaces.
 - d. Do not use cutting torches.
 - e. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - f. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - g. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - h. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
 - i. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.
2. Break up and remove concrete slabs on grade unless otherwise shown to remain.

E. DISPOSAL OF DEMOLISHED MATERIALS

1. General: Remove daily from site accumulated debris, rubbish, and other materials resulting from demolition operations.
 - a. Burning of combustible materials from demolished structures will not be permitted on site.
2. Removal: Transport materials removed from demolished structures and legally dispose off site.
3. Documentation: Provide the owner with copies of records weekly of each load certified in writing by a representative of the landfill as to size, number, and contents.
4. Bid Requirements: All bidders must state in their bid the name of the landfill that will be used. The contractor shall state on the bid form which Landfill they will be using that they can legally accept the spoil and debris from the project.

END OF SECTION 02060

SECTION 02226 - EXCAVATION AND BACKFILLING

PART I - GENERAL

- A. **WORK INCLUDED IN THIS SECTION:**
 - 1. Extent of work required by this section is indicated on drawings for services within building perimeter. Types of work specified in this section include:
 - a. Excavating
 - b. Backfilling
 - c. Granular backfill
- B. **QUALITY ASSURANCE**
 - 1. Comply with laws and regulations of the local authorities having jurisdiction applicable to excavations along property lines and on public property.

PART II - PRODUCTS

- A. **GRANULAR BACKFILL:**
 - 1. Clean, natural, unwashed sand, graded from fine to coarse with not more than 10% by weight of clay and loam for bedding pipes and for backfill. Material shall pass a 3/4" screen and not less than 95% shall pass a #4 sieve. Material shall be tested by the owner-provided geotechnical testing company and must be approved.

PART III - EXECUTION

- A. **JOB CONDITIONS**
 - 1. Locate existing underground utilities occurring in areas of work. If utilities are to remain in place, provide adequate means of support and protection during execution of this work.
 - 2. Where unexpected existing utilities are encountered, stop work and inform Owner's Representative. Protect utilities that are discovered until their disposition, removal or relocation is determined.
 - 3. Coordinate work with other trades.
- B. **PROTECTION**
 - 1. Provide, erect and maintain planking, bracing, shoring, sheeting piling, lights, barricades, warning signals, guards, etc. as necessary for protection of property, workers on job, and general public. Clean daily, if necessary, work area of dirt and debris deposited by operations of this construction.
- C. **EXCAVATION**
 - 1. Do not excavate until ready to proceed without delay, so that total time from beginning excavation to completion of backfilling will be minimized.
 - 2. Perform all excavation and backfilling required to meet finish grades regardless of their relocation to existing elevations shown.
 - 3. Excavate through whatever materials are encountered including rock to obtain indicated lines and grades.
 - 4. Excavate with vertical sided excavations to greatest extent possible. Where necessary to prevent cave-ins and as required to comply with OSHA regulations, provide sheeting and cross-bracing and/or other means to sides of excavations. Remove sheeting and cross-bracing during backfilling only when such removal does not endanger work or other property. Where left in place, cut sheeting off below finished grade to prevent interference with other work.
 - 5. Move excess excavated materials and unsuitable fill to location on site as directed, saving only that amount of clean soil required for backfilling, filling and rough grading. Dispose of

- excess material as directed by the Owner's Representative.
6. Grade trenches to uniform pitch as required by slope of pipe.
 7. Make excavations to the exact depth unless rock, organics, clay, cinders, or debris is encountered then exceed pipe depth requirement by four inches to provide proper pipe bedding.
 8. Shape subbase and bottoms of excavations with recesses to receive pipe bells, flanged connections, valves and similar enlargements in piping systems.
 9. Do not blast.
 10. Remove loose earth and water from trenches and excavations before laying pipe.
 11. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees Fahrenheit.

D. **BACKFILLING**

1. Backfill excavations after installation and testing of piping equipment has been completed.
2. Carefully place granular backfill by hand to entirely surround pipe to height of at least one foot above its top. completely fill spaces under and adjacent to pipe.
3. Do not backfill with frozen materials.
4. Place granular backfill in maximum 6" layers. Compact layer to density of 98% (85% lawn areas) as determined by Standard Proctor Test, ASTM D 698. Condition granular backfill by either drying or adding water uniformly, to whatever extent may be necessary to facilitate compaction to required densities.
5. Backfill to elevations matching adjacent grades.

END OF SECTION 02226

SECTION 02300 - EARTHWORK

PART I - GENERAL

- A. Scope: This section covers the furnishing of all labor, equipment, and material to complete the earthwork as shown on the drawings and as specified herein. If the Drawings indicate different standards than herein specified the Work shall be performed per the more stringent (or higher) standard.
- B. The general provisions of the contract, including General and Supplementary Conditions and Division 1 - General requirements, apply to the work specified in this section.
- C. SUBMITTALS: Section 01330. Submit samples of the proposed material for sand and gravel fill under concrete or paving work to the architect before placing fill.
- D. Testing: The owner shall secure, at their expense, the services of an independent testing agency to conduct compaction tests as specified herein. Each contractor shall be responsible for coordinating with the testing agency for tests, inspections, etc as required.
 - 1. Engineered fill - Testing agency shall be present at the job site during the placement and compaction of any engineered fill to assure that it is in conformance with these specifications and the best construction practices, and make reports of the same to the architect.
 - 2. Other Testing - See Paragraph 3 - execution.
- E. Site Conditions: Protect all existing utilities within the construction area.
- F. Work Included:

In general terms, the following work is included in this section.

 - 1. Excavation, backfill, and hauling of spoils from all building foundations are the responsibility of and are to be completed by the 1A - GW&L Contractor.
 - 2. Placement and grading of the building pad and site is the responsibility and is to be completed by the 1A - GW&L Contractor. Placement and grading of gravel base for all concrete slabs (sidewalks, aprons, building pad, etc.) is the responsibility of and is to be completed by the 1A - GW&L Contractor.
 - 3. All spoils are to be removed to the owner designated area (on site).
 - 4. The area where the septic system is to be located and installed shall not be disturbed or have ANY traffic on it at ANY time. All contractors shall stay off of area.
- G. Layout and Surveying
 - 1. For general grading work, the 1A - GW&L contractor shall provide a civil engineer to layout the area to be graded, place rough elevation grade stakes, and final check for confirmation of grading. The 1A - GW&L shall provide concrete curb and asphalt pavement heights.
 - 2. The 1A - GW&L contractor is responsible for all layout, staking, elevations, etc. Each contractor must coordinate with 1A - GW&L contractor for the stages of layout and staking. The 1A - GW&L is not responsible for lost or damaged layouts caused by other contractors. It is the responsibility of each contractor to communicate with the 1A - GW&L Contractor their needed grade elevations.

PART II - PRODUCTS

- A. Backfill and fill materials shall conform to the following except as specifically indicated otherwise on the drawings:
 - 1. Backfilling (outside walls) and sub grading: Earth which is free of debris, roots, wood, or other deleterious materials. Clean, excavated materials may be used.
 - 2. Backfilling (under concrete slabs and within building lines): Bank run sand and gravel

free from black dirt or other material not readily compacted. May contain clay but shall be of uniform mixture to provide equal compaction.

3. Sand and gravel fill: Pit run, clean and free from dirt, clay, etc. Particle sizes shall range from fine to 3/4" in diameter.
4. Course gravel fill: Gravel shall be clean and free from dirt, clay, etc., and shall range in size from 1/4" to 1" diameter.
5. Engineered fill material shall be either clay or uniform mixture and free from material not readily compatible or bank run sand and gravel as specified in item (2) above. Submit samples of material to testing agency for their inspection and approval.
6. Subbase Material (under pavement): Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, and natural or crushed sand.

PART III - EXECUTION

- A. Each contractor shall visit and examine the site and note all conditions thereon and shall take into consideration all such conditions as may affect this work.
- B. The 1A - GW&L contractor shall employ a competent land surveyor to establish lines and levels necessary to execute his phase of the work. The building location will be determined by the 1A - GW&L contractor.
- C. Each contractor shall protect any adjoining buildings and any adjoining property including sidewalks, gutters, payments, trees, etc., from damage due to his operations. He shall repair any damage which he causes at the completion of his work or sooner, if so directed by the Architect.
- D. Barricades, warning lights, and signs, fences, and other items of protection shall be provided and maintained as required by regulations and safety rules during the execution of this work.
- E. Each contractor shall send proper notice, make the necessary arrangements, and perform all required services in the care and maintenance of all utilities including light poles and other items of this character which may be encountered during the work. The contractor shall assume full responsibility and pay the costs for such damage to these items.
- F. Excavate to lines and elevations as necessary for the proper construction of the work. Equipment and methods shall be suitable for the work at hand. Work shall conform to the following unless indicated otherwise on the drawings.
 1. Sides of building excavations shall be at least 12" from outside construction lines.
 2. Excavated material suitable for backfilling and grading shall be separated from unsuitable material.
 3. Excavated material unsuitable or not required for backfilling and grading shall be removed from the site at the contractor's expense.
 4. Footing excavations may be of dimensions of footing, if nature of soil will so permit; if not, excavations shall be large enough to accommodate forms for the work.
 5. Coordinate excavation of final 4" of footing trenches with work in concrete division so concrete will be placed on dry, solid trench bottoms, and such bottoms shall not be permitted to freeze before concrete is placed. If carried deeper than required, trenches shall have excess depth filled with same concrete as specified for footings.
 6. Boulders over 6" in length, if apparent, shall be removed from subgrade of cut areas.
 7. Support banks of excavations where necessary to protect persons and property with suitable combinations of shoring, sheet piling, bracing, etc.
 8. Soil bearing capacity for footings shall be as indicated on drawings and per soil borings report. If the contractor is in doubt as to the capacity of the soil at the bottom of the footings or other work, he shall ask for further instructions from the Architect. Failing to do this, he shall be responsible for any damage to the building due to settlement.
- G. Trenches, drilled holes, and all other portions of the work shall be kept free from standing water. Wherever the bottom of the excavations has become saturated with water, loose and wet dirt shall be removed just before rebar is placed and concrete is poured.
- H. Protect earth walls in such a manner that earth will not be permitted to fall into concrete.

- I. Backfill around walls, foundations, and under floors as required to bring the surface of the earth to the proper elevations in the various locations as indicated on the drawings.
- J. Placement of Fills:
1. Place sand and gravel fill under all concrete floors, concrete pits, sidewalks, pavement, entrance landings and where indicated on the drawings to the depth as indicated on the drawings.
 - a. ASTM D698, Method D, and shall conform to the following:
 - b. Under surfaced areas, concrete slabs, etc. 92% Min. - 95% Max.
 - c. Outside foundation wall 90% Min. - 95% Max.
 - d. Under lawn or planted areas 90% Min. - 95% Max.
 - e. Other areas 85% Min. - 90% Max.
 - f. Engineered Fills 92% Min. - 95% Max.
 2. The contractor shall have compaction tests taken within the building lines at 100 foot horizontal and 1 foot vertical intervals. Copies of the test results shall be submitted to the architect. Any area failing compaction tests shall be removed, recompacted, and retested at the contractor's expense.
 3. Any fill or backfill outside the building lines will be required to have compaction tests made at his expense by an approved laboratory using approved method of testing. Areas which fail to pass these tests shall be removed and recompacted at the contractor's expense.
 4. Each layer shall be compacted separately to meet the above requirements.
- K. Unusable or excess stripped topsoil and excavated materials shall be moved to an area on site as per the Owner's location.

END OF SECTION 02300

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SECTION 02511 - HOT-MIXED ASPHALT PAVING

PART I - GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section includes provisions for hot-mixed asphalt paving over prepared sub-base.
2. Prepared sub-base is specified in another Division 2 section.
3. Proof rolling of prepared sub-base is included in this Section.

C. SUBMITTALS

1. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
2. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.
3. Pavement marking plan indicating lane separations and defined parking spaces. Mark dedicated handicapped spaces with international graphics symbol.

D. SITE CONDITIONS

1. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg F (10 deg C) and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
2. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 deg F (4 deg C) and when base is dry. Base course may be placed when air temperature is above 30 deg F (minus 1 deg C) and rising.
3. Grade Control: Establish and maintain required lines and elevations.

PART II - PRODUCTS

A. MATERIALS

1. General: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.
2. Coarse Aggregate: Sound, angular crushed stone, crushed gravel, or properly cured crushed blast furnace slag, complying with ASTM D 692-88.
3. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone, properly cured blast furnace slag, gravel, or combinations thereof, complying with ASTM D 1073.
4. Mineral Filler: Rock or slag dust, hydraulic cement, or other inert material complying with ASTM D 242.
5. Asphalt Cement: ASTM D 3381 for viscosity-graded material; ASTM D 946 for penetration-graded material.
6. Prime Coat: Cut-back asphalt type, ASTM D 2027; MC-30, MC-70 or MC-250.
7. Tack Coat: Emulsified asphalt; ASTM D 977.
8. Herbicide Treatment: Commercial chemical for weed control, registered by Environmental Protection Agency. Provide granular, liquid, or wettable powder form.
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 - (1) Ciba-Geigy Corp.
 - (2) Dow Chemical U.S.A.
 - (3) E.I. Du Pont de Nemours & Co., Inc.
 - (4) FMC Corp.
 - (5) Thompson-Hayward Chemical Co.

- (6) U.S. Borax and Chemical Corp.
- (7) Or Architect Approved Equal
- 9. Lane Marking Paint: Alkyd-resin type, ready-mixed complying with AASHTO M 248, Type I.
 - a. Color: White.
 - b. Color: Yellow.

B. ASPHALT-AGGREGATE MIXTURE

- 1. Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with ASTM D 3515 and as recommended by local paving authorities to suit project conditions.

PART III - EXECUTION

A. SURFACE PREPARATION

- 1. General: Remove loose material from compacted sub-base surface immediately before applying herbicide treatment or prime coat. All existing edges shall be sawcut.
- 2. Proof-roll prepared sub-base surface to check for unstable areas and areas requiring additional compaction.
- 3. Notify General Trades and Labor Contractor of unsatisfactory conditions. Do not begin paving work until deficient sub-base areas have been corrected and are ready to receive paving.
- 4. Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturer's recommended dosages and application instructions. Apply to compacted, dry sub-base prior to application of prime coat.
- 5. Prime Coat: Apply at rate of 0.20 to 0.50 gal. per sq. yd., over compacted subgrade. Apply material to penetrate and seal, but not flood surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.
- 6. Tack Coat: Apply to contact surfaces of previously constructed asphalt and surfaces abutting or projecting into hot-mixed asphalt pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
- 7. Allow to dry until at proper condition to receive paving.
- 8. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

B. PLACING MIX

- 1. General: Place hot-mixed asphalt mixture on prepared surface, spread, and strike off. Spread mixture at minimum temperature of 225 deg F (107 deg C). Place areas inaccessible to equipment by hand. Place each course to required grade, cross-section, and compacted thickness.
- 2. Paver Placing: Place in strips not less than 10 feet wide, unless otherwise acceptable to Architect. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.
- 3. Immediately correct surface irregularities in finish course behind paver. Remove excess material forming high spots with shovel or lute.
- 4. Joints: Make joints between successive days' work to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.

C. ROLLING

- 1. General: Begin rolling when mixture will bear roller weight without excessive displacement.
- 2. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- 3. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling and repair

- displaced areas by loosening and filling, if required, with hot material.
4. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been evenly compacted.
 5. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained 95 percent laboratory density.
 6. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot-mixed asphalt. Compact by rolling to specified surface density and smoothness.
 7. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
 8. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

D. TRAFFIC AND LANE MARKINGS

1. Cleaning: Sweep and clean surface to eliminate loose material and dust.
2. Striping: Use chlorinated-rubber base traffic lane-marking paint, factory-mixed, quick-drying, and non-bleeding.
3. Do not apply traffic and lane marking paint until layout and placement have been verified with Architect.
4. Apply paint with mechanical equipment to produce uniform straight edges. Apply at manufacturer's recommended rates to provide minimum 12 to 15 mils dry thickness.

E. FIELD QUALITY CONTROL

1. General: Testing in-place hot-mixed asphalt courses for compliance with requirements for thickness and surface smoothness will be done by Owner's testing laboratory. Repair or remove and replace unacceptable paving as directed by Architect.
2. Thickness: In-place compacted thickness tested in accordance with ASTM D 3549 will not be acceptable if exceeding following allowable variations:
 - a. Base Course: Plus or minus ½ inch.
 - b. Surface Course: Plus or minus 1/4 inch.
3. Surface Smoothness: Test finished surface of each hot-mixed asphalt course for smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:
 - a. Base Course Surface: 1/4 inch.
 - b. Wearing Course Surface: 3/16 inch.
 - c. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
4. Check surface areas at intervals as directed by Architect.

END OF SECTION 02511

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SECTION 02900 - LANDSCAPE WORK

PART I - GENERAL

- A. RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. SUMMARY
 - 1. This Section includes provisions for the following items:
 - a. Trees, Shrubs, Plants, lawns, soil amendments and initial maintenance of landscape materials.
 - 2. Trees, Shrubs and Plants: Are to be provided and installed by the Owner. Contractor shall prepare the grade to accept the trees, shrubs, plants, lawns as described herein. Provide trees, shrubs, and plants of quantity, size, genus, species, and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock". Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.
 - 3. Related Sections: The following sections contain requirements that relate to this Section.
 - a. Excavation, filling, and rough grading required to establish elevations shown on drawings are specified in Division 2 Section "Earthwork."
- C. SUBMITTALS
 - 1. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 2. Planting Schedule: Proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.
 - 3. Maintenance Instructions: Typewritten instructions recommending procedures to be established by Owner for maintenance of landscape work for one full year. Submit prior to expiration of required maintenance period(s).
- D. JOB CONDITIONS
 - 1. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
 - 2. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Architect before planting.
- E. QUALITY ASSURANCE
 - 1. Landscape work shall be performed by a single firm specializing in such work.

PART II - PRODUCTS

- A. Mulch: Organic mulch free from deleterious materials and suitable for top dressing of trees, shrubs, or plants and consisting of the following:
 - 1. Shredded hardwood
- B. PLANT MATERIALS
 - 1. Deciduous Trees: Provide trees of height and caliper scheduled or shown and with branching configuration recommended by ANSI Z60.1 for type and species required. Provide single stem trees except where special forms are shown or listed.
 - 2. Deciduous Shrubs: Provide shrubs of the height shown or listed and with not less than minimum number of canes required by ANSI Z60.1 for type and height of shrub required.

3. Coniferous and Broad leafed Evergreens: Provide evergreens of sizes shown or listed. Dimensions indicate minimum spread for spreading and semi-spreading type evergreens and height for other types, such as globe, dwarf, cone, pyramidal, broad upright, and columnar. Provide normal quality evergreens with well balanced form complying with requirements for other size relationships to the primary dimension shown.
- C. Plastic Sheet: Black, weather-resistant polyethylene sheeting, 0.008 inch (8-mils) thick.
- D. Wrapping: Tree-wrap tape not less than 4 inches wide, designed to prevent borer damage and winter freezing.
- E. Stakes and Guys: Provide stakes and deadmen of sound new hardwood, treated softwood, or redwood, free of knot holes and other defects. Provide wire ties and guys of 2-strand, twisted, pliable galvanized iron wire, not lighter than 12 ga. with zinc-coated turnbuckles. Provide not less than ½ inch diameter rubber or plastic hose, cut to required lengths and of uniform color, material, and size to protect tree trunks from damage by wires.
- F. TOPSOIL
1. Topsoil for landscape work is available at site and will be distributed as specified in specification 02200. Any additional topsoil needed for planting beds, curb islands, etc., must be furnished as part of the work in this sections. Coordinate with Owner as to amount needed.
 2. Provide new topsoil that is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 2 inches in any dimension, and other extraneous or toxic matter harmful to plant growth.
 - a. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at project site. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4 inches. Do not obtain from bogs or marshes.
 3. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing following percentages of available plant nutrients:
 - a. For lawns, provide fertilizer with percentage of nitrogen required to provide not less than 1 pound of actual nitrogen per 1,000 sq. ft. of lawn area and not less than 4 percent phosphoric acid and 2 percent potassium. Provide nitrogen in a form that will be available to lawn during initial period of growth; at least 50 percent of nitrogen to be organic form.
- G. GRASS MATERIALS
1. Grass Seed: Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. This Contractor shall provide a proposed seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed for review and approval by the Architect prior to beginning any seeding operation.

PART III - EXECUTION

- A. PREPARATION - GENERAL: Owner to furnish and install all plants, trees, shrubs, grass, sod, etc. Contractor to prepare landscape areas per the requirements of the specifications.
- B. PREPARATION OF PLANTING SOIL
1. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
 2. Mix specified soil amendments and fertilizers with topsoil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
- C. PREPARATION FOR PLANTING LAWNS

1. Loosen subgrade of lawn areas to a minimum depth of 4 inches. Remove stones measuring over 2 inches in any dimension. Remove sticks, roots, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
 - a. Spread top soil to minimum depth required to meet lines, grades, and elevations shown, after light rolling and natural settlement. Add specified soil amendments and mix thoroughly into upper 4 inches of topsoil.
 - b. Place approximately ½ of total amount of top soil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 4 inches of topsoil.
2. Preparation of Unchanged Grades: Where lawns are to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: Till to a depth of not less than 6 inches. Apply soil amendments and initial fertilizers as specified. Remove high areas and fill in depressions. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter.
 - a. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Legally dispose of such material off-site. Do not turn existing vegetation over into soil being prepared for lawns.

D. SEEDING NEW LAWNS

1. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
2. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds 5 miles per hour. Distribute seed evenly over entire area by sowing equal quantities in 2 directions at right angles to each other.
3. Sow not less than the quantity of seed specified or scheduled.
4. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with a fine spray.
5. Protect seeded slopes against erosion with erosion netting or other methods acceptable to the Architect.
6. Protect seeded areas against erosion by spreading lawn mulch after completion of seeding operations. Spread uniformly to form a continuous blanket not less than 1-1/2 inches loose measurement over seeded areas.
 - a. Anchor mulch by spraying with asphalt emulsion at the rate of 10 to 13 gallons per 1000 sq. ft. Take precautions to prevent damage or staining of construction or other plantings adjacent to mulched areas.

E. HYDROSEEDING NEW LAWNS (Contractor's Option)

1. Mix specified seed, fertilizer, and pulverized mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.
2. Apply slurry uniformly to all areas to be seeded. Rate of application as required to obtain specified seed sowing rate.
3. Protect adjacent surfaces from overspray.

F. EXCAVATION FOR TREES AND SHRUBS

1. Excavate pits, beds, and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
 - a. For balled and burlapped (B/B trees and shrubs), make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus allowance for setting of ball on a layer of compacted backfill.
 - b. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

G. PLANTING TREES AND SHRUBS

1. Set balled and burlapped (B/B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape

grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

2. Set bare root stock on cushion of planting soil mixture. Spread roots and carefully work backfill around roots by hand and puddle with water until backfill layers are completely saturated. Plumb before backfilling and maintain plumb while working backfill around roots and placing layers of soil mixture above roots. Set collar 1 inch below adjacent finish landscape grades. Spread out roots without tangling or turning up to surface. Cut injured roots clean; do not break.
3. Set container grown stock, as specified, for balled burlapped stock, except cut cans on 2 sides with an approved can cutter; remove bottoms of wooden boxes after partial backfilling so as not to damage root balls.
4. Dish top of backfill to allow for mulching.
5. Mulch pits, trenches, and planted areas. Provide not less than following thickness of mulch, and work into top of backfill and finish level with adjacent finish grades.
 - a. Provide 4 inches thickness of mulch.
6. Guy and stake trees immediately after planting, as indicated.

H. MAINTENANCE

1. Begin maintenance immediately after planting.
2. Maintain trees, shrubs, and other plants until final acceptance, but in no case, less than following period:
 - a. 30 days after substantial completion of planting.

I. CLEANUP AND PROTECTION

1. During landscape work, keep pavements clean and work area in an orderly condition.
2. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

END OF SECTION 02900

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART I - GENERAL

- A. RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. SUMMARY: This Section specifies cast-in place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes; and rigid foundation insulation. The extent of the concrete paving, including walkways, is shown on the drawings.
- C. QUALITY ASSURANCE
 - 1. Codes and Standards: Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - a. ACI 318, "Building Code Requirements for Reinforced Concrete."
 - b. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."
- D. SUBMITTALS
 - 1. Provide samples, manufacturer's product data, test reports, and materials' certifications as required in referenced sections for concrete and joint fillers and sealers.
 - 2. Contractor shall submit a layout of all saw cuts and expansion joints prior to placement of concrete and receive approval from the architect.
- E. QUALITY ASSURANCE
 - 1. Codes and Standards: Comply with local governing regulations if more stringent than herein specified.
- F. JOB CONDITIONS
 - 1. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
 - 2. Coordinate with requirements for "Temporary Facilities" specified in Section 01500.

PART II - PRODUCTS

- A. REINFORCING MATERIALS
 - 1. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
 - 2. Welded Wire Fabric: ASTM A 185, welded steel wire fabric.
 - 3. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire-bar-type supports complying with CRSI specifications.
- B. CONCRETE MATERIALS
 - 1. Portland Cement: ASTM C 150, Type I.
 - a. Use one brand of cement throughout project unless otherwise acceptable to Architect.
 - 2. Fly Ash: ASTM C 618, Type C or Type F.
 - 3. Normal Weight Aggregates: ASTM C 33 and as herein specified. Provide aggregates from a single source for exposed concrete.
 - 4. Water: Drinkable.
 - 5. Admixtures, General: Provide admixtures for concrete that contain not more than 0.1 percent chloride ions.
 - 6. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
 - a. Products: Subject to compliance with requirements, provide one of the following:

- (1) "Air-Tite," Cormix.
 - (2) "Air-Mix" or "Perma-Air," Euclid Chemical Co.
 - (3) "Darex AEA" or "Daravair," W.R. Grace & Co.
 - (4) Or Architect Approved Equal
7. Water-Reducing Admixture: ASTM C 494, Type A.
- a. Products: Subject to compliance with requirements, provide one of the following:
 - (1) "Chemtard," ChemMasters Corp.
 - (2) "PSI N," Cormix.
 - (3) "Eucon WR-75," Euclid Chemical Co.
 - (4) Or Architect Approved Equal

C. RELATED MATERIALS

1. Granular Base: Evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade.
2. Sand Cushion: Clean, manufactured or natural sand.
3. Vapor Retarder: Polyethylene sheet not less than 8 mils thick.
4. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
 - a. Polyethylene film.
5. Liquid Membrane-Forming Curing Compound: Liquid-type membrane- forming curing compound complying with ASTM C 309, Type I, Class A. Moisture loss not more than 0.055 gr. /sq. cm. when applied at 200 sq. ft. /gal.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - (1) "A-H 3 Way Sealer," Anti-Hydro Co., Inc.
 - (2) "Day-Chem Cure and Seal," Dayton Superior Corp.
 - (3) "Euco cure," Euclid Chemical Co.
 - (4) Or Architect Approved Equal

D. PROPORTIONING AND DESIGN OF MIXES

1. Prepare design mixes for each type and strength of concrete by experience methods as specified in ACI 301.
 - a. Limit use of fly ash to not exceed 25 percent of cement content by weight.
2. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules:
 - a. Class III, Exterior slabs on grade and all exterior concrete not otherwise identified: 4500-psi, 28-day compressive strength; W/C ratio, 4.5% to 7.5% entrained air.
 - b. Class II, interior slabs on grade, and all interior concrete not otherwise identified: 4000-psi, 28-day compressive strength; W/C ratio, 0.51 maximum (non-air-entrained), 0.40 maximum (air-entrained).
 - c. Class I, footings, 3500-psi, 28-day compressive strength.
3. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.

E. ADMIXTURES

1. Use water-reducing admixture or high-range water-reducing admixture (Superplasticizer) in concrete as required for placement and workability.
2. Use nonchloride accelerating admixture in concrete slabs placed at ambient temperatures below 50 deg F (10 deg C).
3. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within following limits:
 - a. Other concrete (not exposed to freezing, thawing, or hydraulic pressure) or to receive a surface hardener: 2 percent to 4 percent air.
4. Use admixtures for water reduction and set control in strict compliance with manufacturer's directions.
5. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:

- a. Subjected to freezing and thawing; W/C 0.45.
 - b. Subjected to deicers/watertight; W/C 0.40.
 - c. Subjected to brackish water, salt spray, or deicers; W/C 0.40.
6. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
- a. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
 - b. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
 - c. Concrete containing HRWR admixture (Superplasticizer): Not more than 8 inches after addition of HRWR to site-verified 2-inch to 3-inch slump concrete.
 - d. Other concrete: Not more than 4 inches.

F. CONCRETE MIXING

- 1. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as specified.
 - a. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

G. FOUNDATION INSULATION

- 1. Extruded Polystyrene Board Insulation: Rigid, cellular polystyrene thermal insulation with closed-cells and integral high density skin, formed by the expansion of polystyrene base resin in an extrusion process to comply with ASTM C 578 for type indicated; with 5-year aged r-values of 5.4 and 5 at 40 and 75 deg F (4.4 and 23.9 deg C), respectively; and as follows:
 - a. Type IV, 1.6 pcf min. density, unless otherwise indicated.

PART III - EXECUTION

A. GENERAL

- 1. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

B. FORMS

- 1. General: Design, erect, support, brace, and maintain formwork to support vertical and lateral, static and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.
- 2. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

C. VAPOR RETARDER/BARRIER INSTALLATION

- 1. General: Following leveling and tamping of granular base for slabs on grade, place vapor retarder/barrier sheeting with longest dimension parallel with direction of pour.
- 2. Lap joints 6 inches and seal vapor barrier joints with manufacturers' recommended mastic and pressure-sensitive tape.
- 3. After placement of vapor retarder/barrier, cover with sand cushion and compact to depth as shown on drawings.

D. PLACING REINFORCEMENT

- 1. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as herein specified.
 - a. Avoiding cutting or puncturing vapor retarder during reinforcement placement and concreting operations.
- 2. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- 3. Accurately position, support, and secure reinforcement against displacement. Locate and

support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Architect.

4. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
5. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. JOINTS

1. Interior slabs on Grade:
 - a. Locate control and construction joints openings, walls, inside corners and at 15 feet on center generally. Review with Architect proposed location of joints prior to execution of. Schedule slab placements and sawcutting operations such that sawing is completed prior to onset of shrinkage cracking.
 - b. Where joints are exposed to view in the finished building, provide joint sealant.
2. Exterior slabs on Grade: Locate joints as follows:
 - a. Control Joints: Review with Architect proposed location of joints prior to execution of. Tooled, 7/8" deep, 4'-0" to 6'-0" on center between expansion joints.
 - b. All expansion joints shall have joint caulked and expansion joint material shall be hidden.

F. PREPARATION OF FORM SURFACES

1. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before reinforcement is placed.

G. CONCRETE PLACEMENT

1. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
2. General: Comply with ACI 304, "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.
3. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 - a. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
4. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
 - a. Consolidate concrete around reinforcement and other embedded items and into corners.
 - b. Bring slab surfaces to correct level with straightedge and strike off.
 - c. Maintain reinforcing in proper position during concrete placement.
5. Cold-Weather Placing: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
6. Hot-Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305.
7. All concrete washout of delivery trucks shall occur at an owner-approved location. This location shall remain for the duration of the project and not be relocated. The concrete washout must then be hauled off site. It shall not be placed in any dumpster.

H. FINISH OF FORMED SURFACES

1. All finished surfaces shall be approved by the Owner and/or Architect just prior to the final troweling of the concrete surface.
2. Schedule of finishes of flatwork is as follows:
 - a. Typical interior floor areas to receive adhesive-applied finishes, or carpet, or to

- b. remain exposed: troweled finish, Class B tolerance.
Exterior slabs: hand trowel finish, Class C tolerance.

END OF SECTION 03300

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SECTION 05500 - MISCELLANEOUS METALS

PART I - GENERAL

A. GENERAL REQUIREMENTS

1. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

B. SECTION INCLUDES

1. Work of this Section includes all labor, materials, equipment and services necessary to complete the miscellaneous metal work as indicated on the drawings and/or specified herein, including but not limited to, the following:
 - a. Rough hardware.
 - b. Vertical steel ladders.
 - c. Loose steel lintels.
 - d. Light steel framing and supports, not included as part of work of other trades.
 - e. Steel gratings, hangers and frames and rails.
 - f. Masonry support steel.
 - g. Sleeves in concrete walls and slabs.
 - h. Steel framing, bracing, supports, anchors, bolts, shims, fastenings, and all other supplementary parts indicated on drawings or as required to complete each item of work of this Section.
 - i. Prime painting, touch-up painting, galvanizing and separation of dissimilar metals for work of this Section.
 - j. Cutting, fitting, drilling and tapping work of this Section to accommodate work of other Sections and of concrete, masonry or other materials as required for attaching and installing work of this Section.
 - k. Sump Grating.

C. QUALITY ASSURANCE

1. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.
2. Shop Assembly: Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.
3. Reference Standards: The work is subject to requirements of applicable portions of the following standards:
 - a. "Manual of Steel Construction", American Institute of Steel Construction.
 - b. AWS D1-1 "Structural Welding Code", American Welding Society.
 - c. SSPC SP-3 "Surface Preparation Specification No. 3, Power Tool Cleaning", Steel Structures Painting Council.
 - d. SSPC PA-1 "Painting Application Specification", Steel Structures Painting Council.
 - e. "Handbook on Bolt, Nut and Rivet Standards", Industrial Fasteners Institute.

D. PERFORMANCE STANDARDS

1. Ladders, and railings shall be constructed to conform to the following performance standards, unless greater required by Code.
 - a. Platforms shall support a live load of 100 psf and a concentrated live load of 300 lbs. and shall have a live load deflection limited to 1/360 of the span. Loads shall not apply simultaneously.

- b. Railings shall be designed to resist the simultaneous application of a lateral force of 40 pounds per linear foot (PLF) and a vertical load of 50 PLF, both applied to the top of the railing. The total lateral and total vertical load shall be at least two hundred pounds each. Intermediate and bottom rails shall be designed for the simultaneous application of 40 PLF applied horizontally and 50 PLF applied vertically; however, lateral and vertical design loads on intermediate and bottom rails need not be considered in the design of posts and anchorages.

E. SUBMITTALS

- 1. Manufacturer's Literature: Submit manufacturer's specifications, load tables, dimension diagrams, anchor details and installation instructions for products to be used in the fabrication of miscellaneous metal work, including paint products.
- 2. Shop Drawings: Shop drawings for the fabrication and erection of all assemblies of miscellaneous iron work which are not completely shown by manufacturer's data sheets. Include plans and elevations at not less than 1" to 1'-0" scale, and include details of sections and connections at not less than 3" to 1'-0" scale. Show anchorage and accessory items.
- 3. Engineering Data
 - a. Before any stairs, ladders and railings are fabricated, submit engineering data drawings to the Architect for review indicating how performance standards specified here shall be met. The Contractor is responsible for the structural design and supports for these systems and must show his proposed systems on these drawings.
 - b. These drawings must show all load conditions and design calculations relative to connections, fastening devices and anchorage, as well as size and gauge of members. Calculations and drawings must be prepared by a Structural Engineer licensed in the State of Ohio and shall be signed and sealed by this Engineer.
 - (1) Welding shall be indicated on shop drawings using AWS symbols and showing length, size and spacing (if not continuous). Auxiliary views shall be shown to clarify all welding. Notes such as 1/4" weld, weld and tack weld are not acceptable.

PART II - PRODUCTS

A. MATERIALS

- 1. Ferrous Metals
 - a. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
 - b. Steel Plates, Shapes and Bars: ASTM A36.
 - c. Steel Bar Grating: ASTM A569 or ASTM A36.
 - d. Steel Tubing: Cold formed, ASTM A500; or hot rolled, ASTM A501.
 - e. Structural Steel Sheet: Hot rolled, ASTM A570; or cold rolled, ASTM A611, Class 1; of grade required for design loading.
 - f. Galvanized Structural Steel Sheet: ASTM A924, of grade required for design loading. Coating designation G90.
 - g. Steel Pipe: ASTM A53, type and grade as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
 - h. Gray Iron Castings: ASTM A48, Class 30, unless another class is indicated or required by structural loads.
 - i. Malleable Iron Castings: ASTM A47, grade as selected by fabricator.

- j. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
- k. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A47, or cast steel, ASTM A27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A153.
- 2. Grout: Non-shrink, non-metallic grout conforming to the requirements of Section 03300.
- 3. Fasteners
 - a. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
 - b. Bolts and Nuts: Regular hexagon head type, ASTM A307, Grade A.
 - c. Anchor Bolts: ASTM F1554, Grade 36.
 - d. Lag Bolts: ASME B18.2.1.
 - e. Machine Screws: ASME B18.6.3.
 - f. Plain Washers: Round, carbon steel, ASME B18.22.1.
 - g. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.
 - h. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.
 - i. Lock Washers: Helical spring type carbon steel, ASME B18.21.1.
- 4. Shop Paint: Shop prime all non-galvanized miscellaneous metal items using Series 88 Azeron Primer made by Tnemec or approved equal.
- 5. Bituminous Paint: Cold applied asphalt emulsion complying with ASTM D1187.
- 6. Galvanize Repair Coating: For touching up galvanized surfaces after erection, provide Z.R.C. Cold Galvanizing Compound made by Z.R.C. Chemical Products Co. Or Architect Approved Equal

B. PRIME PAINTING

- 1. Scope: All ferrous metal (except galvanized steel) shall be cleaned and shop painted with one coat of specified ferrous metal primer. No shop prime paint required on galvanized steel or aluminum work.
- 2. Cleaning: Conform to Steel Structures Painting Council Surface Preparation Specification SP 3 (latest edition) "Power Tool Cleaning: for cleaning of ferrous metals which are to receive shop prime coat.
- 3. Application
 - a. Apply shop prime coat immediately after cleaning metal. Apply paint in dry weather or under cover. Metal surfaces shall be free from frost or moisture when painted. Paint all metal surfaces including edges, joints, holes, corners, etc.
 - b. Paint surfaces which will be concealed after shop assembly prior to such assembly. Apply paint in accordance with approved paint manufacturer's printed instructions, and the use of any thinners, adulterants or admixtures shall be only as stated in said instructions.
 - c. Paint shall uniformly and completely cover the metal surfaces, 2.0 mils minimum dry film thickness. No work shall be shipped until the shop prime coat thereon has dried.
- 4. Touch-Up: In the shop, after assembly and in the field, after installation of work of this Section, touch-up damaged or abraded portions of shop prime paint with specified ferrous metal primer.
- 5. Apply one shop coat to fabricated metal items, except apply 2 coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first.

C. GALVANIZING

- 1. Scope: All ferrous metal exposed to the weather, and all ferrous metals indicated on drawings or in specifications to be galvanized, shall be cleaned and then hot-dipped galvanized after fabrication.

2. Cleaning: Thoroughly clean metal surfaces of all mill scale, rust, dirt, grease, oil, moisture and other contaminants prior to galvanizing.
3. Application: Hot-dip galvanizing shall be applied in accordance with:
 - a. ASTM A123: Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - b. ASTM A153: Galvanized Coating on Iron and Steel Hardware - Table 1.
 - c. ASTM A924: Galvanized Coating on Steel Sheets.
 - d. Minimum weight of galvanized coating shall be 2 oz. per square foot of surface.
4. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
5. All galvanized materials must be inspected for compliance with these specifications and marked with a stamp indicating the name of the galvanizer, the weight of the coating, and the appropriate ASTM number.
6. To minimize surface imperfection (eg: flux inclusions), material to be galvanized shall be dipped into a solution of Zinc Ammonium Chloride (pre-flux) immediately prior to galvanizing. The type of galvanizing process utilizing a flux blanket overlaying the molten zinc will not be permitted.
7. After galvanizing all materials not exposed to view must be chromated by dipping material in a 0.2% chromic acid solution.
8. Galvanized surfaces, where exposed to view, must have a smooth, level surface finish. Where this does not occur, piece shall be rejected and replaced to the acceptance of the Architect.

D. PROTECTIVE COATINGS

1. Whenever dissimilar metals will be in contact, separate contact surfaces by coating each contact surface prior to assembly or installation with one coat of specified bituminous paint, which shall be in addition to the specified shop prime paint. Mask off those surfaces not required to receive protective coating.

E. WORKMANSHIP

1. General
 - a. Miscellaneous metal work shall be fabricated by an experienced fabricator or manufacturer and installed by an experienced tradesman.
 - b. Materials, methods of fabrication, fitting, assembly, bracing, supporting, fastening, operating devices, and erection shall be in accordance with drawings and specifications, approved shop drawings, and best practices of the industry, using new and clean materials as specified, having structural properties sufficient to safely sustain or withstand stresses and strains to which materials and assembled work will be subjected.
 - c. All work shall be accurately and neatly fabricated, assembled and erected.
2. Shop Assembly: Insofar as practicable, fitting and assembly of work shall be done in shop. Shop assembled work in largest practical sizes to minimize field work. It is the responsibility of the miscellaneous metal subcontractor to assure himself that the shop-fabricated miscellaneous metal items will properly fit the field condition. In the event that shop-fabricated miscellaneous metal items do not fit the field condition, the item shall be returned to the shop for correction.
3. Cutting: Cut metal by sawing, shearing, or blanking. Flame cutting will be permitted only if cut edges are ground back to clean, smooth edges. Make cuts accurate, clean, sharp and free of burrs, without deforming adjacent surfaces or metals.
4. Holes: Drill or cleanly punch holes; do not burn.
5. Connections: Make connections with tight joints, capable of developing full strength of member, flush unless indicated otherwise, formed to exclude water where exposed to weather. Locate joints where least conspicuous. Unless indicated otherwise, weld or bolt shop connections; bolt or screw field connections. Provide expansion and contraction

joints to allow for thermal movement of metal at locations and by methods approved by Architect.

a. Welding

- (1) Shall be in accordance with "Standard Code for Welding in Building Construction" of the American Welding Society, and shall be done with electrodes and/or methods recommended by the manufacturer of the metals being welded.
- (2) Welds shall be continuous, except where spot welding is specifically permitted. Welds exposed to view shall be ground flush and dressed smooth with and to match finish of adjoining surfaces; undercut metal edges where welds are required to be flush.
- (3) All welds on or behind surfaces which will be exposed to view shall be done so as to prevent distortion of finished surface. Remove weld spatter and welding oxides from all welded surfaces.

b. Bolts and Screws: Make threaded connections tight with threads entirely concealed. Use lock nuts. Bolts and screw heads exposed to view shall be flat and countersunk. Cut off projecting ends of exposed bolts and screws flush with nuts or adjacent metal.

6. Operating Mechanism: Operating devices (i.e. pivots, hinges, etc.) mechanism and hardware used in connection with this work shall be fabricated, assembled, installed and adjusted after installation so that they will operate smoothly, freely, noiselessly and without excessive friction.

7. Built-In Work: Furnish anchor bolts, inserts, plates and any other anchorage devices, and all other items specified under this Section of the Specifications to be built into concrete, masonry or work of other trades, with necessary templates and instructions, and in ample time to facilitate proper placing and installation.

8. Supplementary Parts: Provide as necessary to complete each item of work, even though such supplementary parts are not shown or specified.

9. Coordination: Accurately cut, fit, drill and tap work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from applicable trades for proper coordination of this work.

10. Exposed Work

- a. In addition to requirements specified herein and shown on drawings, all surfaces exposed to view shall be clean and free from dirt, stains, grease, scratches, distortions, waves, dents, buckles, tool marks, butts, and other defects which mar appearance of finished work.
- b. Metal work exposed to view shall be straight and true to line or curve, smooth arrises and angles as sharp as practicable, miters formed in true alignment, profiles accurately intersecting, and with joints carefully matched to produce continuity of line and design.
- c. Exposed fastenings, where permitted, shall be of the same material, color and finish as the metal to which applied, unless otherwise indicated, and shall be of the smallest practicable size.

F. MISCELLANEOUS METALS ITEMS

1. Rough Hardware

- a. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 Sections.
- b. Fabricate items to sizes, shapes and dimensions required. Furnish malleable iron washers for heads and nuts which bear on wood connections; elsewhere, furnish steel washers.

2. Steel Pipe Handrails and Guardrails
 - a. Steel pipe of size shown on Drawings, Schedule 40. Fittings shall be flush type, malleable or cast iron. Brackets shall be malleable iron.
 - b. Construction: Form direction changes in rails using solid bar stock or elbows. Connections shall be shop welded and ground smooth and flush, except where field connections and expansion joints are required. Field connections may be welded, internal sleeve and plug weld, or internal sleeve and set screw.
 - c. Longitudinal members shall be parallel with each other and with floor surface or shape of stair to a tolerance of 1/8" in 10'-0" linear feet. Center line of members within each run of railing shall be in the plane.
 - d. Steel pipe handrails shall be capable of resisting a 200 lb. force applied to rail from any direction and a uniformly distributed load of 50 lbs. per linear foot applied downward or horizontally, loads not to act simultaneously.
3. Loose Steel Lintels
 - a. Provide loose structural steel lintels for openings and recesses in masonry walls and partitions as shown. Weld adjoining members together to form a single unit where indicated. Provide not less than 8" bearing at each side of openings, unless otherwise indicated.
 - b. Loose lintels shall conform to the following Schedule:

Opening Width (Maximum)	WALL THICKNESS		
	4 inches	6 inches	8 inches*
2'-0"	3-1/2" x 3-1/2" x 1/4"	6" x 4" x 5/16"	3-1/2" x 3-1/2" x 1/4"
3'-0"	3-1/2" x 3-1/2" x 5/16"	6" x 4" x 5/16"	3-1/2" x 3-1/2" x 5/16"
4'-0"	3-1/2" x 3-1/2" x 5/16"	6" x 4" x 5/16"	3-1/2" x 3-1/2" x 5/16"
5'-0"	4" x 3-1/2" x 3/8"	6" x 4" x 3/8"	4" x 3-1/2" x 5/16"
6'-0"	5" x 3-1/2" x 3/8"	6" x 4" x 3/8"	5" x 3-1/2" x 5/16"
7'-0"	5" x 3-1/2" x 3/8"	5" x 5" x 1/2"	5" x 3-1/2" x 3/8"
8'-0"	5" x 3-1/2" x 3/8"	5" x 5" x 5/8"	5" x 3-1/2" x 3/8"

* Two angles at all openings in 8" walls.

- c. At columns or vertical surfaces where lintels cannot bear on masonry, provide clip angles sized for structural capacity of lintel.
4. Masonry Support Steel
 - a. Provide galvanized steel, relieving angles, plates, accessories and other steel shapes for masonry support steel; for lintels refer to Para. E. herein.
 - b. Fabricate masonry support steel to allow final adjustment with the closest tolerances possible. Relieving angles which require cutting to fit masonry flashing shall be straightened without deflections.
 - c. Coordinate masonry support system with concrete work for locations of wedge inserts.
 - d. Install to meet requirements of building masonry work, face brick coursing and stone placement. Coordinate final adjustments with masonry work as work progresses.

PART III - EXECUTION

A. INSPECTION

1. Examine the areas and conditions where miscellaneous metal is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

B. ERECTION

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
2. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry, or similar construction.
3. Fitting Connections: Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot dip galvanized after fabrication, and are intended for bolted or screwed field connections.
4. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance, and quality of welds made, and methods used in correcting welding work.
5. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
6. Field Touch-Up of Galvanized Surfaces: Touch-up shop applied galvanized coatings damaged during handling and installation. Use galvanizing repair coating specified herein for galvanized surfaces.

END OF SECTION 05500

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SECTION 06100 - ROUGH CARPENTRY

PART I - GENERAL

- A. Scope: This section covers the furnishing of all labor, equipment, and material to complete the rough carpentry work as shown on the drawings and specified herein.
- B. The general provisions of the contract, including General and Supplementary Conditions and Division 1 - General Requirements, apply to the work specified in this section.
- C. Related Work Specified Elsewhere:
 - 1. Insulation - Section 07200
 - 2. Gypsum Drywall - Section 09250
 - 3. Work Included:
 - a. Miscellaneous work to be included in this section shall include, but not be limited to the following:
 - b. Provide all miscellaneous wood ground, nailers and blocking and other wood framing. This will include all blocking required for nailers and backing for any wall mounted items.
 - c. Provide temporary enclosures of plywood on wood framing as required by the progress of the work.

PART II - PRODUCTS

- A. Lumber shall be sound and thoroughly seasoned.
- B. Grade and trademarks shall be required on each piece of lumber (or bundle in bundle stack); use only the recognized official marks of the association under whose rules it is graded. Grade and trademarks will not be required if each shipment is accompanied by the certificate of inspection issued by the association.
- C. Conform to applicable requirements of the following:
 - 1. West Coast Lumberman's Association, Standard Grading and Dressing Rules No. 16.
 - 2. Southern Pine Inspection Bureau, Standard Grading Rules for Southern Pine Lumber.
 - 3. Western Wood Products Association Grading Rules Book.
 - 4. Douglas Fir Plywood, Commercial Standard SCS-45, with approved SFPA grade marks.
- D. Moisture content, unless otherwise specified, 9% of weight of oven-dry wood:
 - 1. Exterior wood: 12% average, 14% maximum.
 - 2. Interior finish: 8% average, 10% maximum.
 - 3. Framing lumber: Dry as locally available.
- E. Dimensions for dry lumber (nominal) conform to U.S. Department of Commerce "American Lumber Standard."
- F. Grades and species shall conform to the following or approved equal:
 - 1. Rough framing: Construction grade Douglas Fir.
 - 2. Furring strips, grounds, blocking: No. 3 pine.
 - 3. Interior plywood, general use: Douglas fir plywood, Grade A-D or A-A, if both sides are exposed. Thickness as called for.
 - 4. Particle board: Premium grade filled surface, "Novoply" by U.S. Plywood, or approved equal.
 - 5. Mastic: Dow General Purpose Mastic No. 11, as manufactured by the Dow Chemical Company or approved equal.

G. FASTENERS

1. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - a. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel.
2. Nails, Wire, Brads, and Staples: FS FF-N-105.
3. Power Driven Fasteners: National Evaluation Report NER-272.
4. Wood Screws: ANSI B18.6.1.
5. Lag Bolts: ANSI B18.2.1.
6. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and where indicated, flat washers.

H. FIRE-RETARDANT TREATMENT BY PRESSURE PROCESS

1. General: Where fire-retardant-treated (F.R.T) wood is indicated, pressure impregnate lumber and plywood with fire-retardant chemicals to comply with AWPA C20 and C27, respectively, for treatment type indicated; identify "fire-retardant- treated wood" with appropriate classification marking of Underwriters Laboratories, Inc., U.S. Testing, Timber Products Inspection, Inc. or other testing and inspecting agency acceptable to authorities having jurisdiction.

PART III - EXECUTION

- A. Stack framing lumber to insure ventilation and drainage. Protect lumber and plywood from the elements.
- B. The contractor shall do all cutting and patching required throughout the building for the installation of his own work and all cutting and patching in woodwork for the installation of the work of other trades.
- C. Protect all items of the carpentry work throughout the building from damage of every description until ordered to remove temporary facilities or until the completion of the building.
- D. Framing shall be cut square on bearings, closely fitted, accurately set to required lines and levels, and rigidly secured in place.
- E. Grounds, blocking, and furring: Furnish and secure all dressed wood grounds, blocking, and furring in and on walls, partitions, ceilings, and elsewhere, as required for firmly securing all inside finishes, wall hung equipment, cabinet work, etc., wood or metal, as required under the contract.
- F. Wood blocking:
 1. Provide wood blocking and backing in the partitions as required for all wall-mounted items such as handrails, cabinet work, etc.
- G. Temporary protections:
 1. Provide and maintain all items of protection, barricades, fences, signal lights, and other similar items as required by the building code, local ordinances, state laws and as may be required in the construction of the project.
- H. Installation Work:
 1. General Notes:
 - a. All installation work shall be in accordance with manufacturer's recommendations.
 2. Casework:
 - a. Receive, store and protect all casework.
 - b. Place all casework as shown on the drawings. Utilize finish carpenters as needed to complete the work properly.
 - c. All work will be installed well fit to walls and floors, firmly secured and completed in a first class workmanlike manner.

END OF SECTION 06100

SECTION 07200 - INSULATION

PART I - GENERAL

- A. RELATED DOCUMENTS
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. SCOPE:
 - 1. This section covers the furnishing of all labor, equipment, and material to complete the sound attenuation insulation work, thermal fiberglass batt insulation, as shown on the drawings and specified herein, unless indicated to be the work of others.
- C. SUBMITTALS
 - 1. Submit complete product data for each material proposed to be provided.
- D. DELIVERY, STORAGE, AND HANDLING
 - 1. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.
 - 2. Protect plastic insulation as follows:
 - a. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
 - b. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
 - c. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART II - PRODUCTS

- A. Faced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type III, Class A (blankets with reflective vapor-retarder membrane facing with flame spread of 25 or less); foil-scrim-kraft or foil-scrim-polyethylene vapor-retarder membrane on one face. Refer to Drawings for R-values and thicknesses.
- B. MANUFACTURERS
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Certain Teed Corp., Valley Forge Pennsylvania
 - b. Owens-Corning Fiberglass, Toledo, Ohio
 - c. Knauf Fiber Glass, Shelbyville, Indiana
 - d. Or Architect Approved Equal
- C. MATERIALS
 - 1. General: Provide insulating materials that comply with requirements and with referenced standards.
 - a. Preformed Units: Sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths, and lengths.
 - 2. Extruded Polystyrene Board Insulation: Rigid, cellular polystyrene thermal insulation with closed-cells and integral high density skin, formed by the expansion of polystyrene base resin in an extrusion process to comply with ASTM C 578 for type indicated; with 5-year aged r-values of 5.4 and 5 at 40 and 75 deg F (4.4 and 23.9 deg C), respectively; and as follows:
 - a. Type IV, 1.6 pcf min. density, unless otherwise indicated.

- b. Type V, 3.0 pcf min. density where indicated.
 - c. Type VI, 1.8 pcf min. density.
 - d. Type VII, 2.2 pcf min. density.
 - e. Type X, 1.35 pcf min. density.
 - f. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 75 and 450, respectively.
3. Glass-Mat-Faced Glass Fiber Board Insulation: Thermal insulation produced by combining glass fibers with thermosetting resin binders to comply with ASTM C 612 for Class indicated; black glass fiber mat facing on one side with maximum flame spread and smoke developed values of 25 and 50, respectively; and as follows:
- a. Low Density Semi-Rigid Board: Class 1, nominal density of 2.25 pcf, R-value of 4.3 at 75 deg F (23.9 deg C).
 - b. Medium Density Semi-Rigid Board: Class 1 and 2, nominal density of 3.0 pcf, r-value of 4.3 at 75 deg F (23.9 deg C).
 - c. Rigid Board: Class 1 and 2, nominal density of 6.0 pcf, r-value of 4.55 at 75 deg F (23.9 deg C).
4. Unfaced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:
- a. Mineral Fiber Type: Fibers manufactured from glass or slag.
 - b. Mineral Fiber Type: Fibers manufactured from glass.
 - c. Mineral Fiber Type: Fibers manufactured from slag.
 - d. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.
5. Faced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type III, Class A (blankets with reflective vapor-retarder membrane facing with flame spread of 25 or less); foil-scrim-kraft or foil-scrim-polyethylene vapor-retarder membrane on one face, and as follows:
- a. Mineral Fiber Type: Fibers manufactured from glass or slag.
 - b. Mineral Fiber Type: Fibers manufactured from glass.
 - c. Mineral Fiber Type: Fibers manufactured from slag.
 - d. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.
 - e. Flanged Units: Provide blankets/batts fabricated with facing incorporating 4-inch-wide flanges along their edges for attachment to framing members.

D. VAPOR RETARDERS

- 1. Polyethylene Vapor Retarder: ASTM D 4397, 6.0 mils thick, with a maximum permeance rating of 0.13 perms.

PART III - EXECUTION

A. GENERAL INSTALLATION

- 1. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.
- 2. Coordinate application with the appropriate building trades involved.
- 3. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation.
- 4. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

B. INSTALLATION OF GENERAL BUILDING INSULATION

- 1. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

2. Seal joints between closed-cell (nonbreathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
3. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
 - a. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
4. Set reflective, foil-faced units accurately with not less than 0.75-inch air space in front of foil as indicated.
5. Stuff glass fiber loose fill insulation into miscellaneous voids and cavity spaces where shown. Compact to approximately 40 percent of normal maximum volume (to a density of approximately 2.5 pcf).

END OF SECTION 07200

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SECTION 07270 – WEATHER BARRIERS

PART I - GENERAL

- A. SECTION INCLUDES
 - 1. Weather barrier membrane
 - 2. Seam Tape
 - 3. Flashing
 - 4. Fasteners

- B. REFERENCES
 - 1. ASTM International
 - a. ASTM C920; Standard Specification for Elastomeric Joint Sealants
 - b. ASTM C1193; Standard Guide for Use of Joint Sealants
 - c. ASTM D882; Test Method for Tensile Properties of Thin Plastic Sheeting
 - d. ASTM D1117; Standard Guide for Evaluating Non-woven Fabrics
 - e. ASTM E84; Test Method for Surface Burning Characteristics of Building Materials
 - f. ASTM E96; Test Method for Water Vapor Transmission of Materials
 - g. ASTM E1677; Specification for Air Retarder Material or System for Framed Building Walls
 - h. ASTM E2178; Test Method for Air Permeance of Building Materials
 - 2. AATCC – American Association of Textile Chemists and Colorists
 - a. Test Method 127 Water Resistance: Hydrostatic Pressure Test
 - 3. TAPPI
 - a. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
 - b. Test Method T-460; Air Resistance (Gurley Hill Method)

- C. SUBMITTALS
 - 1. Refer to Section 01330.
 - 2. Product Data: Submit manufacturer current technical literature for each component.
 - 3. Samples: Weather Barrier Membrane, minimum 8-1/2 inches by 11 inch.
 - 4. Quality Assurance Submittals
 - a. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements.
 - b. Manufacturer Instructions: Provide manufacturer's written installation instructions.
 - c. Manufacturer's Field Service Reports: Provide site reports from authorized field service representative, indicating observation of weather barrier assembly installation.
 - 5. Closeout Submittals
 - a. Refer to Section 01770.
 - b. Weather Barrier Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of Substantial Completion.

- D. QUALITY ASSURANCE
 - 1. Qualifications
 - a. Installer shall have experience with installation of commercial weather barrier assemblies under similar conditions.
 - b. Installation shall be in accordance with weather barrier manufacturer's installation guidelines and recommendations.
 - c. Source Limitations: Provide commercial weather barrier and accessory materials produced by single manufacturer.
 - 2. Mock-up

- a. Install mock-up using approved weather barrier assembly including fasteners, flashing, tape and related accessories per manufacturer's current printed instructions and recommendations.
 - (1) Mock-up size: 10 feet by 10 feet.
 - (2) Mock-up Substrate: Match wall assembly construction, including window opening.
 - (3) Mock-up may remain as part of the work as accepted by Architect.
 - b. Contact manufacturer's designated representative prior to weather barrier assembly installation, to perform required mock-up visual inspection and analysis as required for warranty.
3. Pre-installation Meeting
- a. Hold a pre-installation conference, two weeks prior to start of weather barrier installation. Attendees shall include Contractor, Architect, Engineer, Installer, Owner's Representative, and Weather Barrier Manufacturer's Designated Representative.
 - b. Review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of weather barrier assembly materials and components, installer's training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

E. DELIVERY, STORAGE AND HANDLING

- 1. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- 2. Store weather barrier materials as recommended by weather barrier manufacturer.

F. SCHEDULING

- 1. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly.
- 2. Schedule installation of weather barrier materials and exterior cladding within nine months of weather barrier assembly installation.

G. WARRANTY

- 1. Special Warranty
 - a. Special weather-barrier manufacturer's warranty for weather barrier assembly for a period of ten (10) years from date of final weather barrier installation.
 - b. Approval by weather barrier manufacturer for warranty is required prior to assembly installation.

PART II - PRODUCTS

A. MANUFACTURER

- 1. DuPont Building Innovations; 1.800.44TYVEK
- 2. Or Architect Approved Equal

B. MATERIALS

- 1. Basis of Design: High-performance, spunbonded polyolefin, non-woven, non-perforated, weather barrier is based upon DuPont Tyvek CommercialWrap and related assembly components.
- 2. Performance Characteristics:
 - a. Air Penetration: 0.001 cfm/ft² at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.
 - b. Water Vapor Transmission: 28 perms, when tested in accordance with ASTM

- c. E96, Method B.
- d. Water Penetration Resistance: 280 cm when tested in accordance with AATCC Test Method 127.
- e. Basis Weight: 2.7 oz/yd², when tested in accordance with TAPPI Test Method T-410.
- f. Air Resistance: Air infiltration at >1500 seconds, when tested in accordance with TAPPI Test Method T-460.
- g. Tensile Strength: 38/35 lbs/in., when tested in accordance with ASTM D882, Method A.
- h. Tear Resistance: 12/10 lbs., when tested in accordance with ASTM D1117.
- i. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E 84. Flame Spread: 10, Smoke Developed: 10.

C. ACCESSORIES

1. Seam Tape: 3 inch wide, DuPont Tyvek Tape for commercial applications.
2. Fasteners:
 - a. DuPont Tyvek Wrap Cap Screws, as manufactured by DuPont Building Innovations: 1-5/8 inch rust resistant screw with 2-inch diameter plastic cap or manufacturer approved 1-1/4" or 2" metal gasketed washer
 - b. Tyvek Wrap Caps, as manufactured by DuPont Building Innovations: #4 nails with large 1-inch plastic cap fasteners.
3. Sealants
 - a. Refer to Section 07900 Sealants
 - b. Provide sealants that comply with ASTM C920, elastomeric polymer sealant to maintain watertight conditions.
 - c. Products:
 - (1) Tremco 830
 - (2) Tremco Butyl
 - (3) Sealants recommended by the weather barrier manufacturer.
4. Adhesives:
 - a. Provide adhesive recommended by weather barrier manufacturer.
 - b. Products:
 - (1) Liquid Nails LN-109
 - (2) Polyglaze SM 5700
 - (3) Denso Butyl Liquid
 - (4) 3M High Strength 90
5. Primers:
 - a. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.
 - b. Products:
 - (1) 3M High Strength 90
 - (2) Denso Butyl Spray
 - (3) Primers recommended by the flashing manufacturer
6. Flashing
 - a. DuPont FlexWrap, as manufactured by DuPont Building Innovations: flexible membrane flashing materials for window openings and penetrations.
 - b. DuPont StraightFlash, as manufactured by DuPont Building Innovations: straight flashing membrane materials for flashing windows and doors and sealing penetrations such as masonry ties, etc.
 - c. DuPont StraightFlash VF, as manufactured by DuPont Building Innovations: dual-sided straight flashing membrane materials for brick mold and non-flanged windows and doors.

PART III - EXECUTION

- A. EXAMINATION
1. Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories.
- B. INSTALLATION – WEATHER BARRIER
1. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.
 2. Install weather barrier prior to installation of windows and doors.
 3. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.
 4. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers. Maintain weather barrier plumb and level.
 5. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant as recommended by weather barrier manufacturer.
 6. Window and Door Openings: Extend weather barrier completely over openings.
 7. Overlap weather barrier
 - a. Exterior corners: minimum 12 inches.
 - b. Seams: minimum 6 inches.
 8. Weather Barrier Attachment:
 - a. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, space 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.
 9. Apply 4 inch by 7 inch piece of DuPont StraightFlash to weather barrier membrane prior to the installation cladding anchors.
- C. SEAMING
1. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.
 2. Seal any tears or cuts as recommended by weather barrier manufacturer.
- D. OPENING PREPARATION (for use with non-flanged windows – all cladding types)
1. Flush cut weather barrier at edge of sheathing around full perimeter of opening.
 2. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.
- E. FLASHING (for use with non-flanged windows – all cladding types)
1. Cut 7-inch wide DuPont FlexWrap a minimum of 12 inches longer than width of sill rough opening. Apply primer as required by manufacturer.
 2. Cover horizontal sill by aligning DuPont FlexWrap edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
 3. Fan DuPont FlexWrap at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
 4. Apply 9-inch wide strips of DuPont StraightFlash at jambs. Align flashing with interior edge of jamb framing. Start DuPont StraightFlash at head of opening and lap sill flashing down to the sill.
 5. Spray-apply primer to top 6 inches of jambs and exposed sheathing.
 6. Install DuPont FlexWrap at opening head using same installation procedures used at sill. Overlap jamb flashing a minimum of 2 inches.
 7. Coordinate flashing with window installation.
 8. On exterior, install backer-rod in joint between window frame and flashed rough framing. Apply sealant at jambs and head, leaving sill unsealed. Apply sealants in accordance with

- sealant manufacturer's instructions and ASTM C 1193.
9. Position weather barrier head flap across head flashing. Adhere using 4-inch wide DuPont StraightFlash over the 45-degree seams.
 10. Tape top of window in accordance with manufacturer recommendations.
 11. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.
- F. OPENING PREPARATION (for use with flanged windows)
1. Cut weather barrier in a modified "I-cut" pattern.
 - a. Cut weather barrier horizontally along the bottom of the header.
 - b. Cut weather barrier vertically 2/3 of the way down from top center of window opening.
 - c. Cut weather barrier diagonally from bottom of center vertical cut to the left and right corners of the opening.
 - d. Fold side and bottom weather barrier flaps into window opening and fasten.
 2. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.
- G. FLASHING (for use with flanged windows)
1. Cut 7-inch wide DuPont FlexWrap a minimum of 12 inches longer than width of sill rough opening.
 2. Cover horizontal sill by aligning DuPont FlexWrap edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
 3. Fan DuPont FlexWrap at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
 4. On exterior, apply continuous bead of sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.
 5. Install window according to manufacturer's instructions.
 6. Apply 4-inch wide strips of DuPont StraightFlash at jambs overlapping entire mounting flange. Extend jamb flashing 1-inch above top of rough opening and below bottom edge of sill flashing.
 7. Apply 4-inch wide strip of DuPont StraightFlash as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
 8. Position weather barrier head flap across head flashing. Adhere using 4-inch wide DuPont StraightFlash over the 45-degree seams.
 9. Tape head flap in accordance with manufacturer recommendations.
 10. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.
- H. FIELD QUALITY CONTROL
1. Notify manufacturer's designated representative to obtain periodic observations of weather barrier assembly installation.
- I. PROTECTION
1. Protect installed weather barrier from damage.

END OF SECTION 07270

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SECTION 07600 - FLASHING AND SHEET METAL

PART I - GENERAL

- A. RELATED DOCUMENTS
 - 1. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.
- B. SUMMARY
 - 1. This Section includes the following:
 - a. Metal counter flashing and base flashing (if any).
 - b. Metal wall flashing and expansion joints.
 - c. Gutters and down spouts (rain drainage).
 - d. Exposed metal trim/fascia units.
 - e. Miscellaneous sheet metal accessories.
- C. SUBMITTALS
 - 1. Product data, Flashing, Sheet Metal, and Accessories: Manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
- D. PROJECT CONDITIONS
 - 1. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART II - PRODUCTS

- A. SHEET METAL FLASHING AND TRIM MATERIALS
 - 1. Zinc-Coated Steel: Commercial quality with 0.20 percent copper, ASTM A 526 except ASTM A 527 for lock-forming, G90 hot-dip galvanized, mill phosphatized where indicated for painting; 0.0359-inch thick (20 gage) except as otherwise indicated.
 - 2. Sheet Aluminum: ASTM B 209, alloy 3003, temper H14, AA-C22A41 clear anodized finish; 0.032-inch thick (20 gage) except as otherwise indicated.
- B. MISCELLANEOUS MATERIALS AND ACCESSORIES:
 - 1. Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
 - 2. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, non-drying, nonmigrating sealant.
 - 3. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7 Section "Joint Sealers."
 - 4. Epoxy Seam Sealer: 2-part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior nonmoving joints including riveted joints.
 - 5. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.
 - 6. Reglets: Metal or plastic units of type and profile indicated, compatible with flashing indicated, noncorrosive.
 - 7. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

C. FABRICATED UNITS

1. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal other than aluminum, tin edges to be seamed, form seams, and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
3. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
4. Sealant Joints: Where movable, nonexpansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
5. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

PART III - EXECUTION

A. INSTALLATION REQUIREMENTS

1. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
2. Underlayment: Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.
3. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
4. Install reglets to receive counterflashing in manner and by methods indicated. Install counterflashing in reglets, either by snap-in seal arrangement or by welding in place for anchorage and filling reglets with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.
5. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6 inches O.C. Fabricate seams at joints between units with minimum 3-inch overlap, to form a continuous, waterproof system.

B. CLEANING AND PROTECTION

1. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
2. Protection: Advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION 07600

SECTION 07900 - SEALANTS

PART I - GENERAL

- A. Scope: This section covers the furnishing of all labor, equipment and materials to complete the sealant work as shown the drawings and as specified herein.
- B. The general provisions of the contract, Division O - Conditions of the Contract including General and Supplementary Conditions and Division 1 General Requirements, apply to the work specified in this section.
- C. Guarantee: Contractor shall guarantee the work under this section to be weather-tight for a period of five years.

PART II - PRODUCTS

- A. Sealant shall be single-part acrylic terpolymer base sealant meeting Fed. Spec. TT-S-00230 and shall be "mono" as manufactured by:
 - 1. Tremco Manufacturing Company, Cleveland, Ohio; 60+ by Pecora Corporation;
 - 2. or Architect Approved Equal.
- B. Caulking shall be acrylic latex base caulking as manufactured by Tremco Manufacturing Company, Cleveland, Ohio or Architect Approved Equal
- C. Sealant and caulking primer as recommended by caulking manufacturer.
- D. Joint backup: "Ethafoam" rod stock, one size larger than joint opening, as made by Dow Chemical or Architect Approved Equal.

PART III - EXECUTION

- A. Sealant and caulking compound application shall be in accordance with manufacturer's recommendations.
- B. Sealant shall be used in the following locations but shall not be limited to these locations as related to new work:
 - 1. Where shown on drawings.
 - 2. All exterior joints of materials and expansion joints of every description.
 - 3. Perimeter of window frames, door frames, louvers, etc.
 - 4. All interior joints of dissimilar materials where movement can be expected because of temperature changes, shrinkage, settlement, etc.

END OF SECTION 07900

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SECTION 08110 - STANDARD STEEL DOORS AND FRAMES

PART I - GENERAL

- A. SCOPE: This section covers the furnishing of all labor, equipment, and materials to complete the metal door and frame work as shown on the drawings and specified herein.
- B. The general provisions of the contract, including General And Supplementary Conditions and Division 1 - General Requirements, apply to the work specified in this section.
- C. Related work specified elsewhere:
 - 1. Finish Hardware, See Section 08710 - Finish Hardware.
 - 2. Shop Drawings: See Section 01305, Submittals
- D. The work under this section includes delivery of metal doors and frames to the jobsite. Unloading, storage and installation work to be provided by general work and labor Contractor. Installation is specified in Section 06100.
- E. The metal doors and frames shall be delivered to the site with notice and proper instruction given to the installing Contractor in regard to care, storage and installation of these doors and frames. Any doors or frames received in a damaged condition shall be repaired or replaced by the Metal Door and Frame Contractor without expense to the Owner.

PART II - PRODUCTS

- A. Hollow metal work shall be made of furniture sheet steel of prime quality, cold rolled, full pickled, double annealed, stretcher leveled, open hearth free from rust, scale, pits, surface, or internal defects as manufactured by:
 - 1. Steelcraft
 - 2. Amweld
 - 3. Ceco
 - 4. Republic
 - 5. or Architect Approved Equal.
- B. Frames:
 - 1. Exterior hollow metal frames shall be F16 (16 gage) A-60 galvanized steel. Corners shall be mitered and face welded and ground smooth. Provide steel stud jamb and base anchors.
 - 2. Interior hollow metal frames shall be DW16 (16 gage) cold rolled steel. Corners shall be mitered with integral tabs for reinforcement and interlocking of head . Provide compression anchors at the top of each jamb and drywall sill anchors at the base.
 - 3. All frames shall be mortised and reinforced for hardware. All frames shall have hardware reinforcements factory installed and be drilled and tapped (templates supplied by hardware supplier). Surface hardware shall be drilled and tapped at the jobsite. Frames shall be prepared for silencers, provide 3 per strike jamb and two per double door frame head.
- C. Doors:
 - 1. Exterior hollow metal doors shall be full flush series L18 (18 gage) A-60 galvanized steel with polystyrene insulated core.
 - 2. Interior hollow metal doors shall be full flush series L18 (18 gage) cold rolled steel with honeycomb core.
 - 3. Doors shall be fabricated with a stretcher level degree of flatness and shall meet Steel Door Institute's Type II, Heavy Duty, Style 1, Full Flush. Top of door shall have a flush end closure treatment. Bottom of door shall have recessed channel end closure which will allow 3/4" to be cut from bottom of door for threshold or carpet clearance.

- D. Finishes: Hollow metal doors and frames shall be thoroughly cleaned, phosphate treated, and finished with one coat baked-on rust inhibitive primer.
- E. Provide Underwriters' Laboratories label frames and doors as noted on the drawings. Provide smoke resistant weatherstripping on all labeled frames.

PART III - EXECUTION

- A. Frames: Refer to plans for quantity and location of frames.
 - 1. The frames shall be mortised, reinforced, drilled, and tapped for all mortise hardware except that the drilling and tapping for surface door closers, door closer brackets, and other surface hardware shall be done in the field by erectors. The manufacturer shall mortise or drill for door silencers as required.
 - 2. Provide minimum reinforcement for the following appurtenances: Hinges, 3/16" by 1-1/2"; lock strike, 3/16" by 1-1/2"; closer reinforcement, 14 gauge formed continuous channel reinforcement at head. For identification at the jobsite, the frame number shall be stamped on the center hinge reinforcement of each door frame.
 - 3. Provide 12 gauge angle clips at the bottom of all frames with punched holes for securing the frames to floor construction. Also, provide a 16 gauge spreader channel at the bottom of all frames to avoid twisting of frames in shipment.
 - 4. Provide steel stud anchors; three per jamb on frames up to seven feet in height and four per jamb on frames over seven feet in height, of type best suited for wall construction.
 - 5. Provide steel back box at strike appurtenance to conceal interior wall construction.
- B. Doors:
 - 1. Doors shall be of flush construction 1-3/4" thickness.
 - 2. All doors shall be constructed in such a manner that at least 3/4" may be cut from the bottom. Mortise and reinforce for hardware as follows: Hinges, minimum of 3/16" by 1-1/2" by 4". Provide centering clip for lock case alignment and 14 gauge reinforcement for escutcheons or roses. Provide reinforcement units for cylindrical locks. All doors have 12 gauge channel type reinforcement 14" long for application for door closers at any time on either side. Where doors are to be fitted GJ-100 or similar mortised door holder, provide 14 gauge steel reinforcing channel to receive holder in a snug fit. Doors shall be fabricated to a maximum tolerance of 1/16" from a straight edge when laid on face of door in any direction, including diagonal.
- C. Verify with door schedule and hardware specification as to door openings. With thresholds and type of thresholds as to required door clearance from finished floor.
- D. Store doors and frames under cover at least 4" off the ground or floor slab. Do not cover with a non-venting cover such as plastic which will create a humidity chamber.
- E. Install frames plumb, rigid, and in true alignment and fasten so as to retain their position and clearances.
- F. Install frames and doors as per manufacturer's recommendations and in accordance with manufacturer's shop drawings.
- G. When installing frames in a CMU wall and frames are set prior to CMU being laid, NEVER brace or anchor frames to the concrete slab by drilling, tap conning, shooting nails, or any other means that will scare, chip, divot, or anyway damage the surface of the slab.

END OF SECTION 08110

SECTION 08360 - SECTIONAL OVERHEAD DOORS

PART I - GENERAL

- A. RELATED DOCUMENTS
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. SUMMARY
 - 1. Provide labor, materials, and equipment necessary for complete installation of the overhead doors.
 - 2. Related work specified elsewhere:
 - a. Division 16 - Electrical
 - 3. Refer to Section 01210 for Allowances that may affect the work of this section.
- C. SUBMITTALS
 - 1. Product Data: Submit door manufacturer's product data, specifications, and installation instructions for each type overhead door.
 - 2. Shop drawings shall show elevations of each door type, door construction details, and methods of assembling sections, hardware locations and installation methods, dimensions and shapes of materials, anchorage and fastening methods, door frame types and details, wall opening construction details, weather-stripping, and finish requirements.
 - 3. Provide samples of metal skin colors, labeled. No less than 4 different colors shall be provided for selection by Owner. Samples shall be 2" x 2".

PART II - PRODUCTS

- A. MANUFACTURERS
 - 1. Products of the following manufacturers will be considered, providing their products equal or exceed the quality specified; and they can provide the type, size, function, and arrangement required:
 - a. Raynor Garage Door Co.
 - b. Clopay Overhead Door Co.
 - c. Wayne/Dalton Corp.
 - d. Overhead Door Corp.
 - e. Haas Door
 - f. Or Architect Approved Equal
- B. TYPE
 - 1. Flush steel sectional upward acting door; equal to Haas Model #716 series.
- C. MATERIAL AND FABRICATION
 - 1. Construct door sections from galvanized, structural-quality carbon steel sheets complying with ASTM A 446, Grade A, or ASTM A 526, with a minimum yield strength of 33,000 psi, and a minimum G60 zinc coating complying with ASTM A 525.
 - a. Steel Sheet Thickness: 26 gauge.
 - b. Fabricate sections from a single sheet to provide units not more than 24 inches high, and nominally 2 inches deep. Roll horizontal meeting edges to a continuous shiplap, rabbeted, or keyed weather seal, with a reinforcing flange return.
 - 2. Enclose open section with 16-gage galvanized steel channel, end stiles welded in place. Provide intermediate stiles, cut to door section profile, spaced at not more than 48 inches o.c. and welded in place.
 - 3. Reinforce bottom section with a continuous channel or angle conforming to bottom section profile.
 - 4. Reinforce sections with continuous horizontal and diagonal reinforcing, as required by door

width and design wind loading. Provide galvanized steel bars, struts, trusses or strip steel, formed to depth, and bolted or welded in place.

5. Insulate inner core of steel sections with manufacturer's standard glass-fiber, polystyrene, or polyurethane-foam type insulation.
 - a. Enclose insulation with manufacturer's standard steel sheet secured to door panel.
6. Finish door sections as follows:
 - a. Apply manufacturer's standard prime and finish coats, applied to interior and exterior door faces. Colors to be selected by Architect.
7. Glazing: Provide standard glazing units of 24 inches by 8 inches, held in place with glazing moldings and as indicated on drawings. Single glazing shall be DSA clear glass. Locate glazing units approximately 5 feet above floor or as indicated.

D. TRACKS, SUPPORTS, AND ACCESSORIES

1. Tracks: Provide manufacturer's standard, galvanized-steel track system, sized for door size and weight, and designed for clearances shown. Provide complete track assembly including brackets, bracing and reinforcing for rigid support of ball-bearing roller guides for required door type and size. Slot vertical sections of track at 2 inches O.C. for door-drop safety device. Slope tracks at proper angle from vertical or otherwise design to ensure tight closure at jambs when door unit is closed. Weld or bolt to track supports.
2. Track Reinforcement and Supports: Provide galvanized-steel track reinforcement and support members. Secure, reinforce and support tracks as required for size and weight of door to provide strength and rigidity without sag, sway, and vibration during opening and closing of doors.
3. Support and attach tracks to opening jambs with continuous angle welded to tracks and attached to wall. Support horizontal (ceiling tracks) with continuous angle welded to track and supported by laterally braced attachments to overhead structural members at curve and end of tracks.
4. Weather Seals: Provide continuous rubber, neoprene, or flexible vinyl adjustable weather-strip gasket at tops and compressible astragal on bottoms of each overhead door. Color to be chosen by Architect.
 - a. In addition, provide continuous flexible seals at door jamb edges for a fully weather-tight installation.

E. HARDWARE

1. General: Provide heavy-duty, rust-resistant hardware, with galvanized or cadmium-plated or stainless steel fasteners, to suit type of door.
2. Hinges: Provide heavy steel hinges at each end stile and at each intermediate stile, per manufacturer's recommendations for size of door. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is not possible. Provide double-end hinges, where required, for doors exceeding 16 feet in width, unless otherwise recommended by door manufacturer.
3. Rollers: Provide heavy-duty rollers, with steel ball bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide roller tires to suit size of track (3-inch diameter for 3-inch track; 2-inch diameter for 2-inch track) and as follows:
 - a. Case-hardened steel tires for normal installations.
4. Pull Handles, Locks and Latches: For manually operated doors, furnish lifting handles, locks, and locking device as follows:
 - a. Lifting Handles: Galvanized steel..
 - b. Locking Bars: Single side, operable from inside and outside.
5. Fabricate locking device assembly with mortise lock, spring-loaded dead bolt, chromium-plated operating handle, cam plate, and adjustable locking bar to engage through slots in tracks.

F. COUNTERBALANCING MECHANISM

1. Torsion Spring: Operation by torsion-spring counterbalance mechanism, consisting of adjustable-tension, tempered-steel torsion springs mounted on a cross header tube or steel shaft. Connect to door with galvanized aircraft-type lift cables. Provide springs calibrated for 10,000 cycles minimum.

2. Provide cast-aluminum or grey-iron casting cable drums, grooved to receive cable. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of shaft. Provide one additional midpoint bracket for shafts up to 16 feet long and two additional brackets at one-third points to support shafts over 16 feet long, unless closer spacing recommended by door manufacturer.
3. Include a spring-loaded, steel or bronze cam mounted to bottom door roller assembly on each side, designed to automatically stop door if either cable breaks.
4. Provide a spring bumper at each horizontal track to cushion door at end of opening operation.

G. ELECTRIC DOOR OPERATORS

1. General: Furnish electric door-operator assembly of size and capacity recommended and provided by door manufacturer; complete with electric motor and factory-prewired motor controls, gear-reduction unit, solenoid-operated brake, clutch, remote-control stations and control devices.
2. Provide hand-operated disconnect or mechanism for automatically engaging sprocket-chain operator and releasing brake for emergency manual operation. Include interlock device to automatically prevent motor from operating when emergency sprocket is engaged.
3. Design operator so that motor may be removed without disturbing limit-switch adjustment and without affecting emergency auxiliary operator.
4. Door Operator Type: Provide the following: Trolley or drawbar type, V-belt and roller chain-and-sprocket primary drive, and chain-and-sprocket secondary drive.
5. Electric Motors: Provide high-starting torque, reversible, constant-duty, Class A-insulated electric motors with overload protection, sized to move door in either direction, from any position, at not less than 2/3 foot or more than 1 foot per second.
 - a. Coordinate wiring requirements and current characteristics of motors with building electrical system.
6. Remote Control Station: Provide momentary-contact, three-button control station with push button controls labeled "Open," "Close," and "Stop" at each door opening and all other locations specified in the drawings.
 - a. Provide interior units, full-g geared, surface-mounted, heavy-duty, with general purpose NEMA Type 1 enclosure.
 - b. Provide exterior units, full-guarded, standard-duty, surface-mounted, weatherproof type, NEMA Type 4 enclosure, key-operated.
7. Automatic Reversing Control: Furnish each door with automatic safety switch, extending full width of door bottom, and located within neoprene or rubber astragal mounted to bottom door rail. Contact with switch will immediately reverse downward door travel. Furnish manufacturer's standard take-up reel or self-coiling cable.
 - a. Provide safety eyes and pneumatic edge.

PART III - EXECUTION

A. INSTALLATION

1. General: Install door, track, and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, inserts, hangers, and equipment supports and blocking according to shop drawings, manufacturer's instructions, and as specified.
2. Fasten vertical track assembly to framing at not less than 24 inches O.C. Hang horizontal track from structural overhead framing with angle or channel hangers, welded and bolt-fastened in place. Provide sway bracing, diagonal bracing, and reinforcing as required for rigid installation of track and door-operating equipment.
3. After completing installation, including work by other trades, lubricate, test, and adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.
4. The overhead doors shall be installed and working successfully with handheld operators at a minimal distance of 50'-0" from the building. If installing coax cable and mounting brackets and antennas on the exterior of the building is needed for this distance, then this shall be included in your bid for the successful completion of the operation of overhead doors.

END OF SECTION 08360

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SECTION 08710 - DOOR HARDWARE

PART I - GENERAL

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Scope: This Section includes items known commercially as finish or door hardware as described in the specification and as required by hardware sets on the Hardware Schedule as shown on the Drawings.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 8 Section "Standard Steel Doors and Frames"
 - 2. Division 8 Section "Wood and Plastic Doors"
- D. SUBMITTALS: See "Submittals" Section 01330
- E. Schedules: Within fourteen days after award of Contract and before any hardware is ordered, submit 6 copies of a complete, hardware schedule. Schedule shall be coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - a. Based on hardware indicated, organize schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:
 - b. Type, style, function, size, and finish of each hardware item.
 - c. Name and manufacturer of each item.
 - d. Fastenings and other pertinent information.
 - e. Location of each hardware set cross referenced to indications on Drawings both on floor plans and in door and frame schedule.
 - f. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - g. Mounting locations for hardware.
 - h. Door and frame sizes and materials.
- F. QUALITY ASSURANCE
 - a. Single Source Responsibility: Obtain each type of hardware from a single manufacturer.
 - b. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced architectural hardware consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.
 - c. Require supplier to meet with Owner to finalize keying requirements and to obtain final instructions in writing.
 - d. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by UL, Warnock Hersey, FM, or other testing and inspecting organization acceptable to authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels.
- G. TEMPLATES
 - a. Furnish a final hardware schedule and templates to door and door frame suppliers. If required, the hardware supplier shall furnish physical hardware to the door and frame manufacturers for application.
 - b. All reinforcements required to adapt hardware to metal doors or frames shall be supplied by the door and/or frame manufacturers.
- H. MARKING, PACKING, DELIVERY, AND STORAGE

1. All hardware shall be delivered to the job site or, upon request to the door/and or frame manufacturers in the manufacturers original cartons, marked to correspond with the reviewed hardware schedule. The general trade's contractor shall be responsible for the protection and storage of all hardware. All items shall be packed to prevent damage in transit.

PART II - PRODUCTS

A. MANUFACTURERS

1. Manufacturers: Subject to compliance with requirements and as applicable to the Hardware Schedule, provide products by one of the following:
 - a. Butts and Hinges:
 - (1) *McKinney
 - (2) Hager Hinge Company
 - (3) Ives
 - b. Cylinders and Locks:
 - (1) * Sargent
 - (2) Best
 - (3) Schlage
 - c. Exit Devices:
 - (1) *Sargent
 - (2) Precision
 - (3) VonDuprin
 - d. Overhead Closers:
 - (1) * Sargent
 - (2) LCN
 - (3) Stanley Door Closer
 - e. Door Weatherstrip/Thresholds/Door Sweeps
 - (1) *Pemko
 - (2) Hager
 - (3) Reese Enterprises
 - f. Push/Pulls, Flush Bolts, Dust Proof Strike, Stops, Silencers
 - (1) *Rockwood
 - (2) Hager
 - (3) Ives
 - g. Electronic Push Button Locks and Trim
 - (1) * Alarm Lock ETDL and DL3000

B. SCHEDULED HARDWARE

1. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the "Hardware Schedule" at the end of this section. All door hardware shall be manufactured and installed to meet the handicapped accessibility guidelines of ADAAG.

C. HINGES, BUTTS, AND PIVOTS

1. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90 inches or less in height and one additional hinge for each 30 inches of additional height.
2. Fire-Rated Doors: Not less than 3 hinges per door leaf for doors 86 inches or less in height with same rule for additional hinges.

- D. KEYING
 - 1. Submit Keying Schedule as follows:
 - 2. After review of the hardware schedule, meet with the owner to obtain proper requirements.
 - 3. Deliver keys to Owner.

- E. HARDWARE FINISHES
 - 1. The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.

PART III - EXECUTION

- A. INSTALLATION
 - 1. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.
 - a. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
 - b. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
 - 2. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
 - 3. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

- B. ADJUSTING, CLEANING, AND DEMONSTRATING
 - 1. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.
 - a. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
 - 2. Clean adjacent surfaces soiled by hardware installation.

- C. HARDWARE SCHEDULE:
 - 1. General: Provide hardware for each door to comply with requirements of Section "Door Hardware," hardware set numbers indicated in door schedule, and in the following schedule of hardware sets.

Hardware Sets

SET #01

Doors: 1

3 Hinges	5BB1HW 4 ½ X 4 ½ NRP	630	IV
1 Door Closer	SC71 SS	689	FL
1 Exit Device	LD 99L	US26D	VO
1 Interchangeable Core	CB807 MK TD/KWY	626	FL
1 Rim Cylinder	C953 7-PIN	US26D	FL
1 Neoprene Gasketing	700 EN 1 x 36" 2 x 84"		NA
1 Door Sweep	200 NA 36"		NA
1 Saddle Threshold	425 HD 36" ¼-20 MS/EA US26D	AL	NA
1 Drip Cap	16 A 40"	AL	NA

SET #02

Doors: 2, 3, 4

1 Hardware Supplied by Others ALL HARDWARE SUPPLIED BY OTHERS

END OF SECTION 08710

SECTION 09910 - PAINTING

PART I - GENERAL

- A. **RELATED DOCUMENTS:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. **SUMMARY**
1. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.
 - a. Surface preparation, priming, and finish coats specified in this Section are in addition to shop-priming and surface treatment specified under other Sections.
 2. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.
 - a. Painting includes field-painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
 3. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.
 4. **Related Sections:** The following Sections contain requirements that relate to this Section:
 - a. Division 8 Section "Standard Steel Doors and Frames" for shop-priming steel doors and frames..
 - b. Divisions 15 and 16: Painting mechanical and electrical work.
- C. **SUBMITTALS**
1. **General:** Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
 2. **Product data** for each paint system specified, including block fillers and primers.
 - a. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
 - b. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
 - c. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).
 3. **Samples for initial color selection** in the form of manufacturer's color charts.
 - a. After color selection, the Architect will furnish color chips for surfaces to be coated.
- D. **QUALITY ASSURANCE**
1. **Applicator Qualifications:** Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.
 2. **Single-Source Responsibility:** Provide primers and undercoat paint produced by the same manufacturer as the finish coats.
 3. **Field Samples:** On wall surfaces and other exterior and interior components, duplicate finishes of prepared samples. Provide full-coat finish samples on at least 100 sq. ft. of surface until required sheen, color, and texture are obtained; simulate finished lighting conditions for review of in-place work.
 - a. Final acceptance of colors will be from job-applied samples.
 - b. The Architect will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted. Apply coatings in this room or surface according to the schedule or as specified.

- (1) After finishes are accepted, this room or surface will be used to evaluate coating systems of a similar nature.

E. DELIVERY, STORAGE, AND HANDLING

1. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - a. Product name or title of material.
 - b. Product description (generic classification or binder type).
 - c. Manufacturer's stock number and date of manufacture.
 - d. Contents by volume, for pigment and vehicle constituents.
 - e. Thinning instructions.
 - f. Application instructions.
 - g. Color name and number.
2. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

F. JOB CONDITIONS

1. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).
2. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).
3. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
 - a. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

PART II - PRODUCTS

A. MANUFACTURERS

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
2. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - a. The Sherwin-Williams Company (S-W).
 - b. Or Architect Approved Equal

B. PAINT MATERIALS, GENERAL

1. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.
2. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.
 - a. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.

3. Colors: Provide color selections made by the Architect from the manufacturer's full range of standard colors.
- C. PRIMERS: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.
- D. INTERIOR FINISH PAINT MATERIAL
 1. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.

PART III - EXECUTION

- A. EXAMINATION
 1. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.
 - a. Do not begin to apply paint until unsatisfactory conditions have been corrected.
 - b. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
 2. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - a. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.
- B. PREPARATION
 1. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
 2. Cleaning: Before applying surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
 3. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each substrate condition and as specified.
 - a. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.
 - b. Ferrous Metals: Clean ungalvanized ferrous metal surfaces that have not been shop-coated; remove oil, grease, dirt and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council (SSPC).
 - (1) Blast steel surfaces clean as recommended by the paint system manufacturer and according to requirements of SSPC specification SSPC-SP 10.
 - (2) Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - (3) Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.
 - c. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

4. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.
 - a. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 - b. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
 - c. Use only thinners approved by the paint manufacturer and only within recommended limits.

C. APPLICATION

1. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 - a. Paint colors, surface treatments, and finishes are indicated in the schedules.
 - b. Provide finish coats that are compatible with primers used.
 - c. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
 - d. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
 - e. The term exposed surfaces includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
 - f. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - g. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
 - h. Caulk all door frame/gypsum board joints prior to painting.
 - i. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 - j. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
 - k. Finish exterior doors on tops, bottoms, and side edges same as exterior.
 - l. Sand lightly between each succeeding enamel or varnish coat.
 - m. Omit primer on metal surfaces that have been shop-primed and touch-up painted.
3. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - a. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
4. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.
 - a. Brushes: Use brushes best suited for the material applied.
 - b. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 - c. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

5. Minimum Coating Thickness: Apply materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
6. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.
7. Mechanical items to be painted include, but are not limited to, the following:
 - a. Piping, pipe hangers, and supports.
 - b. Ductwork.
 - c. Insulation.
 - d. Supports.
 - e. Accessory items.
8. Electrical items to be painted include, but are not limited to, the following:
 - a. Conduit and fittings.
 - b. Panelboards.
9. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
10. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
11. Pigmented (Opaque) Finishes: Completely cover to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
12. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
 - a. Provide satin finish for final coats.
13. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

D. CLEANING

1. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
 - a. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

E. PROTECTION

1. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
2. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 - a. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

F. INTERIOR PAINT SCHEDULE: Provide the following paint systems for the various substrates, as indicated.

1. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
 - a. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a primer.
 - b. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils (0.031 mm).
 - c. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film

- thickness of not less than 2.6 mils (0.066 mm).
2. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
- a. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a rust-inhibitive primer.
 - b. Primer: Rust-inhibitive metal primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.3 mils (0.033 mm).
 - c. First and Second Coats: Semigloss, exterior, acrylic-latex enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils (0.066 mm).
 - d. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated (galvanized) metal surfaces:
 - e. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a galvanized metal primer.
 - f. Primer: Galvanized metal primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils (0.031 mm).
 - g. First and Second Coats: Semigloss, exterior, acrylic-latex enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils (0.066 mm).
- G. Completion – Leave for Owner 1 gallon of each type and color of painted applied. Label each container.

END OF SECTION 09910

SECTION 10520 - FIRE EXTINGUISHERS AND CABINETS

PART I - GENERAL

- A. **RELATED DOCUMENTS:** Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. **DESCRIPTION:** Contractor shall provide new extinguishers and cabinets as described on drawings and in these specifications.
- C. **QUALITY ASSURANCE:** All new extinguishers and cabinets shall meet all local codes and regulations for this product and installation. Provide cabinet with decals per code.

PART II - PRODUCTS

A. EXTINGUISHERS

- 1. Standard: J.L. Industries.
- 2. Extinguisher: Cosmic 10E, multi-purpose dry chemical for class A, B and C fires. Provide one (1) per cabinet.

B. CABINETS

- 1. Standard: J.L. Industries
 - a. Series: "Academy #1027: (aluminum); ADA compliant; semi-recessed; 3" return trim' rolled edge.
 - b. Size/Type: Suitable for wall construction and extinguisher type. See Drawings for locations and wall constructions.
 - c. Door Type: S21 (Solid).
 - d. Finish: #180 clear anodized.
 - e. Letters: white letters, vertical.
- 2. Kitchen: J.L. Industries
 - a. Series: "Academy #2027: (aluminum); ADA compliant; semi-recessed; 3" return trim' rolled edge.
 - b. Size/Type: Suitable for wall construction and extinguisher type. See Drawings for locations and wall constructions.
 - c. Door Type: S21 (Solid).
 - d. Finish: #180 clear anodized.
 - e. Letters: white letters, vertical.

C. MANUFACTURERS

- 1. Subject to compliance with requirements, provide products from one of the following:
 - a. J. L. Industries
 - b. Larsen
 - c. Potter-Roemer
 - d. Or Architect Approved Equal

PART III - EXECUTION

- A. Contractor shall install fire extinguishers and cabinets at locations shown on drawings. Mount top of cabinet at 54" above finish floor.

END OF SECTION 10520

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SECTION 13554 – PRE-ENGINEERED WOOD FRAME BUILDING

PART I - GENERAL

- A. This Section Includes:
 - 1. Factory fabricated pre-engineered wall column.
 - 2. Factory fabricated pre-engineered roof truss.
 - 3. Factory fabricated pre-engineered siding panels and metal roofing.
 - 4. Factory fabricated pre-engineered building system accessories including, but not limited to interior metal wall liner.
 - 5. Prefinished metal trim items.
 - 6. Prefinished ridge vents and soffits.

- B. Related Sections:
 - 1. Section 07720 – Ridge Vents

- C. Reference Standards:
 - 1. Preservative Treated Lumber
 - a. American Wood Preservers Association (AWPA)
 - (1) Treated item shall comply with AWPA standard C15 minimum.
 - (2) Treated items shall bear the quality mark with appropriate specification information, along with and stamped by the participating mill or agency involved.
 - 2. Framing Lumber
 - a. Lumber grading rules and wood species
 - (1) National Design Specifications for Wood Construction, current edition.
 - (2) Northeastern Lumber Manufacturer's Association, Inc. (NELMA).
 - (3) Southern Pine Inspection Bureau (SPIB): Southern Pine.
 - (4) West Coast Lumber Inspection Bureau (WCLIB): Douglas Fir.
 - (5) Western Wood Products Association (WWPA): Douglas Fir and Ponderosa Pine.
 - 3. Wood Trusses
 - a. All lumber used in the design of wood trusses must be kiln dried and graded in accordance with current grading rules. Design stresses allowed are those listed in the current editions of the respective Lumber Association's grading rules and National Design Specifications (NDS supplement) for wood construction.
 - b. The design of wood members must be in accordance with the formulas published in the current edition of the National Design Specifications for Wood Construction.
 - c. Light metal toothed connector plates and joint design must conform to specifications as set by the current edition of "Truss Plate Institute's" National Design Standard for Metal Plate Connected Wood Truss Construction (TPI).
 - (1) Connector plates shall be fabricated from ASTM 446, Grade A, #16 and #20 gauge steel sheets galvanized with G-60 coating.
 - d. Truss members and joints must be designed in accordance with the current edition of TPI. All truss designs must be accompanied by complete and accurate shop drawings and contain the following information:
 - (1) Slope or depth, span and spacing of the truss.
 - (2) Heel bearing height.
 - (3) Design loading to include:
 - (a) Top chord live load

- (b) Top chord dead load
 - (c) Bottom chord dead load
 - (d) Concentrated loads and their points
 - (4) Adjustments to lumber and plate design values for conditions of use.
 - (5) Plate type, thickness of gauge, and size.
 - (6) Lumber size, species and grade for each member.
- D. System Description:
 - 1. Clear span frame – coordinate with drawings.
 - 2. Primary framing – wood roof trusses and columns.
 - 3. Secondary framing – purlins, girts, bracing and other items as required.
 - 4. Wall and roof systems – preformed metal panels.
- E. Design Requirements:
 - 1. Coordinate building loads. Refer to design load tables on plans.
 - 2. Building Code: Ohio Building Code (OBC)
- F. Submittals:
 - 1. Submit under requirements of Section 01300.
 - 2. Supply five (5) sets of the following bearing a Professional Engineering Seal registered and 4 sets without a seal.
 - a. Complete detailed shop and erection drawings indicating size and location of each building component and part. Certify that specified roof and wind load requirements are met.
 - b. Truss engineering calculations and design calculation should include the following:
 - (1) Bending moments and axial forces for each member.
 - (2) Basic plate design values.
 - (3) Design analysis for each joint indicating that proper plates have been used.
 - (4) Successful bidder shall provide written proof of a third party inspection program in force for the truss manufacturer used on project.
 - c. 2 Sets standard metal color samples 2” x 2” minimal supplied by Manufacturer for the owner/architect to choose from.
 - d. Brochures/details/samples of specialty accessory products used or specified on this project.
- G. Quality Assurance:
 - 1. Building package by a pre-engineered building Manufacturer with almost 50 years of doing business with no bankruptcy or reorganizations.
 - 2. Building Manufacturer must own manufacturing facilities.
 - 3. Exterior fastened steel panel shall be roll-formed in Manufacturer’s manufacturing facility.
 - 4. Columns shall be factory fabricated by Manufacturer, in their manufacturing facility. They shall not be manufactured or assembled on site.
 - 5. Trusses shall be factory fabricated by Manufacturer, not the contractor.
 - 6. Building package shall be supplied by a pre-engineered building Manufacturer, with fully staffed engineering department. All structural components shall be supplied by a source with one warranty.
 - 7. All building packages shall be delivered by the Manufacturer’s trucks and personnel.
 - 8. Package (shell) erection shall be supervised by Manufacturer’s representative builder or Manufacturer employed field superintendent.
- H. Qualifications:
 - 1. Structural components shall be designed under direct supervision of a Professional Engineer employed by the Manufacturer.

2. An adequate number of skilled work people shall be employed who are thoroughly trained and experienced in the necessary skills. They will be completely familiar with the specified requirements and methods for proper performance of work.
- I. Regulatory Requirements:
1. All applicable building codes and/or ordinances covering this work shall be the responsibility of the contractor.
 2. Work together with regulatory agencies or authorities to provide data as requested.
 3. Panels shall not be stored such that they are in contact with any other material that could create staining or discoloration.
- J. Qualifications:
1. Structural components shall be designed under direct supervision of a Professional Engineer employed by the Manufacturer.
 2. An adequate number of skilled work people shall be employed who are thoroughly trained and experienced in the necessary skills. They will be completely familiar with the specified requirements and methods for proper performance of work.
- K. Regulatory Requirements:
1. All applicable building codes and/or ordinances covering this work shall be the responsibility of the contractor.
 2. Work together with regulatory agencies or authorities to provide data as requested.
 3. Panels shall not be stored such that they are in contact with any other material that could create staining or discoloration.
- L. Environmental Requirements:
1. Material packaging for minimum natural resource waste on project.
 2. Building delivery package materials must be reused in the building system, i.e., metal panel cribbing 2x's used as part of secondary framing systems (nonstructural.)
- M. Delivery, Storage and Handling:
1. Prefabricated components, i.e., trusses, columns, steel sheathing and other items, shall be delivered and stored so they will not be damaged or deformed.
 2. Roofing and siding panels will be stored so water will drain freely.
 3. Panels shall not be stored such that they are in contact with any other material that could create staining or discoloration.
- N. Warranty:
1. Contractor to warrant to the original owner, commencing on the date of its substantial completion and subject to limitations, exclusions and conditions set forth herein, as follows:
 2. For Fifty (50) Years:
 - (1) Contractor will replace or repair, at its option, *Free of Charge* treated structural posts that fail because of insect damage or because of decay that occurs under normal conditions and proper use.
 3. For Twenty (25) Years:
 - (1) Contractor will replace or refinish, at its option, *Free of Charge* painted steel roofing or siding panels if the paint peels, cracks, checks, flakes or blisters to an extent that is apparent by ordinary outdoor visual observation when exposed to normal weather and atmospheric conditions. Damage or loss resulting from exposure to atmospheric pollutants, including but not limited to animal waste or other corrosive conditions, is excluded under this warranty.

- (2) Contractor will replace or refinish, at its option, *Free of Charge* painted steel and roofing or siding panels should the color change or chalk more than the specifications shown in the following table:

	Vertical Installation	Non-Vertical Installation
Chalk (ASTM D-659)	8	6
Color Change (ASTM D-2244)	5	7

- (3) Contractor will replace or repair, at its option, *Free of Charge* Galvalume® coated steel roofing or siding panels should they rupture, perforate or fail structurally when exposed to normal weather and atmospheric conditions. Damage or loss resulting from exposure to atmospheric pollutants, including but not limited to animal waste or other corrosive conditions, is excluded under this warranty.

4. For Seven (7) Years:

- (1) Contractor will repair leaks in steel roofing panels, at its option, *Free of Charge* that result from defects in material or workmanship except those leaks occurring where the building is connected to an adjacent structure.

5. For Five (5) Years:

- (1) Contractor will replace or repair, at its option, *Free of Charge* those portions of the structural framework including roofing and siding panels damaged by wind or snow loads that do not exceed design specifications.
- (2) Contractor will replace or repair, at its option, *Free of Charge* sliding doors damaged by wind or snow so long as the door is in a locked-open or locked-closed position when the damage occurs.
- (3) Contractor will replace or repair, at its option, *Free of Charge* steel roofing or siding panels perforated by hail.

6. For One (1) Year:

- (1) Contractor will repair *Free of Charge* any other defects in material or workmanship.

PART II - PRODUCTS

A. Building System Manufacturers:

1. Wick Buildings,
2. Walters
3. Lester
4. Cleary
5. Or Architect Approved Equal

B. Materials – Framing:

1. Columns
 - a. Factory fabricated from minimum 3 ply 2"x6" #1 or better southern yellow pine. Columns shall be full-length (unspliced) nail laminated plies up through 20' with middle ply to have short truss support block. Columns over 20' length shall be spliced (a minimum of 3' length) with reinforced metal truss plates pressed in place over splice on the outside laminate.
 - b. The area in contact with the ground shall be pressure treated. This is in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition, with a wood preservative to a net retention of .60 pounds per cubic foot of CCA Type – C formulation.

2. Wood Trusses
 - a. Lumber
 - (1) Top chord: #1 or better southern yellow pine.
 - (2) Bottom chord: 1950 machine stress rated or equivalent spruce pine
 - (3) Webs: #2 or better spruce pine fir.
 - b. Trusses shall be constructed of surfaced lumber, smooth and free of all cracks and checks.
 - c. Plates: Connector plates shall be fabricated from ASTM 446, Grade A, #16 and #20 gauge steel sheets galvanized with a G-60 coating.
 - d. Design and fabricate trusses and connections to withstand designated snow and wind loads and all dead loads.
 - e. Fabricate trusses in plant, using mechanical or hydraulic fixtures as required to bring members into contact. Install plates in accordance with Manufacturer's instruction.
 - f. Baseboards
 - (1) 2"x8" #2 or better southern yellow pine, tongue and groove.
 - (2) The area in contact with the ground shall be pressure treated with a wood preservative to a net retention of .4 pounds per cubic foot and kiln dried after treating to 19% maximum moisture content.
 - (3) The wood preservatives shall be Chromate Copper Arsenate Type "C" (Oxide type) as listed in Federal specifications TT-W-571J.
 - (4) The preservative shall penetrate 100% of the sapwood.
 - g. Wall Girts
 - (1) 2"x6" #2 southern yellow pine or better as required by design at appropriate spacing.
 - h. Purlins and Truss Ties
 - (1) 2"x4" #2 southern yellow pine or better as required by design dependent upon roof loading specification.
 - i. Overhang Framing
 - (1) Provide fabricated rafter frames.
 - (2) Provide 2"x6" #2 or better spruce pine fir factory beveled fascia boards.
 - j. Wind Bracing
 - (1) Provide "T'd" 2"x6"/2"x4" #2 or better spruce pine fir from end wall column to first truss back.
 - (2) Provide 2"x4" diagonal in roofline bracing as required by design.
 - k. Framing Around Openings
 - (1) Provide 2"x6"/2"x4" #2 or better spruce pine fir around personnel doors and windows
 - (2) Provide 2"x6"/2"x4" #2 or better spruce pine fir around overhead door openings.
 - l. Headers
 - (1) Provide built-up #1 or better southern yellow pine headers as required to meet proper loading.
 - m. Incidental framing
 - (1) Provide No.2 or better 2"x4" spruce pine fir.

C. Materials – Prefinished Materials:

1. Roofing Panels
 - a. All roofing panels shall be 29 gauge (.015 minimum thickness) steel with a G-90 galvanized zinc coating. Panels shall be a minimum structural strength ASTM A446 grade E, 82,000 PSI tensile strength. All panels shall include a zinc phosphate pre-treatment, then covered with a total of 1.5 mil thick paint system. Paint system shall consist of a corrosion-resistant prime coat and an architectural finish coat of Ceram-A-Star 950.

- b. All metal roof and sidewall panels shall be fastened with minimum of 1” color-matched neoprene washered #9 screw fasteners placed in the flat of the steel next to all major ribs along every row of girts and purlins. All fasteners shall be color-matched to wall and roof panels and trim.
 - 2. Sidewall Panels
 - a. All siding panels shall be 29 gauge (.015 minimum thickness) steel with a G-90 galvanized zinc coating. Panels shall be a minimum structural strength ASTM A446 grade E, 82,000 PSI tensile strength. All panels shall include a zinc phosphate pre-treatment, then covered with a total of 1.5 mil thick paint system. Paint system shall consist of a corrosion-resistant prime coat and an architectural finish coat of Ceram-A-Star 950.
 - b. All metal roof and sidewall panels shall be fastened with minimum of 1” color-matched neoprene washered #9 screw fasteners placed in the flat of the steel next to all major ribs along every row of girts and purlins. All fasteners shall be color-matched to wall and roof panels and trim.
 - 3. Soffits
 - a. Overhangs
 - (1) Soffits shall be aluminum vented or non-vented as required. Colors shall closely match building panel colors.
 - 4. Ridge Vent
 - a. Accessories
 - (1) Provide Manufacturer’s standard pre-engineered ridge cap, flashings and eave and gable trim. Field-fabricate minor flashings as shown on erection drawings.
 - (2) Provide Manufacturer’s standard ridge vent as shown on drawings.
 - (3) Closure Strips: Closed cell, 2 psf density polyethylene foam, premolded to match configuration of panels.
 - 5. Gutter and Downspouts
 - a. If shown and specified on drawings, provide 5” style “K” gutter. Material shall be the same specification as trim.
 - b. Silicone sealant shall be used at laps to maintain leak prevention and to relieve stress due to thermal movement.
 - c. Provide 3”x4” downspouts with appropriate elbows and connector bands.
 - d. Gutter shall be attached with screw fasteners and internal brackets of a maximum of 24” on center. Exposed nail heads are unacceptable.
- D. Materials – Other:
 - 1. Closure Strips
 - a. Closed cell foam premolded to match configuration of panels.
 - 2. Sealant
 - a. Silicone sealant shall be used.
- E. Insulation:
 - 1. ASTM C665, Type I, Class A, Unfaced Fiberglass Blanket
 - a. Thermal Resistance:
 - (1) [R-19, 6” thick], [R-30, 9” thick]
 - b. Physical Properties:
 - (1) Flame Spread, ASTM E 84
 - (2) Smoke Developed, ASTM E 84

PART III - EXECUTION

- A. Examination:
 - 1. Verify that site conditions meet Manufacturer’s requirements and design requirements for this region.
 - 2. Verify that mechanical and electrical utilities are in correct position.
 - 3. Field verify existing building dimensions, roof pitch, and connection requirements.

- B. Erection – Framing – General:
1. Erect framing in accordance with Manufacturer’s established construction procedures.
 2. Make all components and building plumb, square, straight and true to lines.
 3. Provide adequate temporary bracing to assure structure remains plumb and square.
 4. Altering of structural members will not be permitted.
- C. Erection Framing:
1. Columns – Provide hold down bracket as designed by manufacturer. Bracket shall be installed after foundation has been poured. Drill holes per the structural engineer designated depth. Use epoxy as per structural engineer. All bolts/nuts shall be tightened per approval of Architect prior to covering over with insulation/metal liner.
 - a. Auger hole to plan depth of the diameter shown on plans.
 - b. Pour ready mix concrete pad in the bottom of each hole per plans.
 - c. Install 2”x4” hold down blocks at the bottom of each column.
 2. Baseboards
 - a. Install 2”x8” treated plank, at grade, using Manufacturer recommended fasteners.
 3. Wall Girts
 - a. Install 2”x6” girts at centers called for on plan.
 - b. Install 2”x6” overhang nailer, if required, at the top.
 4. Trusses
 - a. Set trusses in place in the center member of the column using lifting methods as approved by the Manufacturer.
 - b. When properly positioned, install ½” x 5 ½” machine bolts and Manufacturer recommended 16d ring shank nails through two of the column laminates and the truss heel.
 - c. Brace trusses as recommended by Manufacturer.
 5. Purlins
 - a. Install 2”x4” purlins at 24” on center and attach to trusses with 60d ring shank nails and 10d toe nails.
 6. Truss Ties
 - a. Install 2”x4” truss ties at location recommended by Manufacturer.
 - b. Truss ties shall run from end wall to end wall.
 7. Incidental Framing
 - a. Install 2”x4” or 2”x6” blocking as required according to building Manufacturers recommendations.
- D. Erection – Prefinished Metals, General:
1. In accordance with Manufacturer’s established construction procedures, install prefinished metal parts.
 2. All components made to be plumb, square, straight and true to lines.
 3. Care shall be taken when cutting prefinished materials to ensure cuttings do not remain on finished surface.
 4. Fasteners shall be properly installed. Do not under- or overdrive.
 5. Components shall be properly installed to assure freedom from rattles.
 6. All metal surfaces shall be free of dirt, mud, chalkline, etc. All surfaces shall be cleaned at end of project, both exterior and interior.
- E. Erection – Prefinished Metals:
1. Roofing Panels
 - a. Panels shall be installed perpendicular to supports aligned straight with end fascias.
 - b. Panels shall be fastened to purlins with 1” EPDM washered #9 screw fasteners.
 2. Siding Panels
 - a. Panels shall be installed perpendicular to supports aligned level and plumb.

- b. Attach to wall girts and purlins with 1” EPDM washered #10 screw fasteners.
 - 3. Trim Items
 - a. Trim items shall be installed at the base, at any wainscot transition, corners, top of steel siding, fascias, gables and ridge using appropriate 1” screw fasteners.
 - 4. Vented Ridges
 - a. Use screw fasteners to install applicable vent option.
 - b. Insure that the minimum Manufacturer’s clear throat opening is maintained.
 - 5. Soffits
 - a. Soffits shall be installed to interlock with trim items at top of steel siding and at fascias.
 - b. Solid or optional vented soffit shall be used at end overhang.
 - c. A combination of solid and perforated soffits shall be provided for balanced ventilation at side overhangs.
 - 6. Gutters and Downspouts
 - a. Gutters shall be installed with concealed gutter brackets, with screw fasteners 24” on center.
 - 7. Filler Strips
 - a. Closed cell foam filler strips shall be provided at the top and bottom of the roofing panels.
- F. Tolerances/Quality Assurance:
- 1. Framing Members
 - a. Shall follow and adhere to the NFBA document “Accepted Practices for Post-frame Construction Framing Tolerances.”
 - 2. Siding and Roofing
 - a. Shall be installed in their “True Position.”

END OF SECTION 13554

SECTION 15050 - BASIC MECHANICAL MATERIALS AND METHODS

PART I - GENERAL

- A. SUMMARY: Section Includes:
1. Mechanical basic requirements.
 2. Definitions.
- B. DEFINITIONS
1. Provide: "Provide" means furnish new, install, and make operational in the location indicated.
 2. Coordinate: "Coordinate" means locate to avoid existing and new equipment, services, and obstructions.
 3. Products: "Products" means new material, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying, and erection of the Work.
- C. SUBMITTALS
1. Submit under provisions of Division 1.
 2. Submit shop drawings and product data, grouped into a single submittal which includes complete submittals of related systems, Products, and accessories.
 3. Mark dimensions and values in units to match those specified.
- D. QUALITY ASSURANCE
1. Equipment Selection: Equipment of higher electrical characteristics, physical dimensions, capacities, and ratings may be furnished provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors, bases, and equipment spaces are increased. Additional costs shall be approved in advance by appropriate Contract Modification for these increases. If minimum energy ratings or efficiencies of equipment are specified, equipment must meet design and commissioning requirements.
- E. DELIVERY, STORAGE, AND HANDLING
1. Transport, handle, store and protect Products in accordance with manufacturer's instructions.
- F. SEQUENCING AND SCHEDULING
1. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work. Coordinate installation of large equipment requiring positioning before closing in building.
 2. Coordinate connection of mechanical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.
 3. Coordinate mechanical equipment installation with other building components.
 4. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components, as they are constructed.
 5. Arrange for duct spaces, chases, etc. in building structure during progress of construction to allow for mechanical installations.
 6. Coordinate requirements for access panels and doors if mechanical items requiring access are concealed behind finished surfaces.
- G. REGULATORY REQUIREMENTS
1. Obtain inspections from authority having jurisdiction.
- H. PRODUCT OPTIONS

1. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
2. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
3. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

I. SUBSTITUTIONS

1. Instructions to Bidders specify time for submitting requests for Substitutions during the bidding period to requirements specified in this section.
2. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

PART II - PRODUCTS (NOT APPLICABLE)

PART III - EXECUTION

A. INSTALLATION

1. Install materials in accordance with manufacturer's instructions.

END OF SECTION 15050

SECTION 15080 - HVAC INSULATION

PART I - GENERAL

- A. SUMMARY: Section Includes:
 - 1. Duct insulation.
- B. SUBMITTALS
 - 1. Product Data: Provide manufacturer's installation instructions and product description of each product for review. Identify thermal conductivity, thickness, and jackets for each service or equipment scheduled.
- C. ENVIRONMENTAL REQUIREMENTS
 - 1. Do not install insulation and insulation products when ambient temperatures and conditions are not as required by manufactures of adhesives, mastics, and insulation cements.
 - 2. Maintain temperature before, during, and after installation for minimum period of 24 hours.
- D. QUALITY ASSURANCE
 - 1. Insulation materials, including adhesives and jackets as installed on exterior surfaces, shall be UL approved and shall have maximum flame spread rating of 25 and smoke developed rating of 50 as tested in accordance with ASTM E84, NFPA 255 and UL 723.
 - 2. Insulation used for a specific service shall be of the same type and material throughout.

PART II - PRODUCTS

- A. MANUFACTURERS
 - 1. Knauf.
 - 2. CertainTeed.
 - 3. Owens-Corning.
 - 4. Or Architect Approved Equal
- B. INSULATION MATERIALS
 - 1. Flexible Glass Fiber Blanket:
 - a. ASTM C553; glass fibers bonded with a thermosetting resin.
 - b. Density: 1.5 lb/cu.ft.
 - c. 'k' Value: 0.24 at 75°F mean temperature difference.
 - d. Vapor Barrier Jacket: Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, secured with pressure sensitive tape.

PART III - EXECUTION

- A. EXAMINATION AND PREPARATION
 - 1. Verify that duct has been tested before applying insulation materials.
 - 2. Verify that surfaces are clean, foreign material removed, and dry.
- B. INSTALLATION
 - 1. Install Work in accordance with manufacturer's instructions.
- C. SCHEDULES
 - 1. Duct Insulation:
 - a. Supply and Return Duct:
 - (1) Flexible Glass Fiber Blanket
 - (2) Duct Size Range: All
 - (3) Thickness: 2 inch.

END OF SECTION 15080

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SECTION 15145 – SUPPORTS AND ANCHORS

PART I - GENERAL

- A. WORK INCLUDED
 1. Pipe, duct, and equipment hangers, supports, and associated anchors.
 2. Equipment bases and supports.
 3. Sleeves and seals.
 4. Flashing and sealing equipment and pipe stacks.

- B. REFERENCES
 1. ANSI/ASME B31.1 Power Piping.
 2. NFPA 13 Standard for the Installation of Sprinkler Systems.

- C. QUALITY ASSURANCE
 1. Supports for Sprinkler Piping: In conformance with NFPA 13.

- D. SUBMITTALS
 1. Submit shop drawings and product data under provisions of Division 1.
 2. Indicate hanger and support framing and attachment methods.

- E. MANUFACTURERS
 1. Fee & Mason Mfg. Co.
 2. P.H.D. Manufacturing Co.
 3. ITT Grinnell Corp.
 4. Mason Industries

PART II - PRODUCTS

- A. PIPE HANGERS AND SUPPORTS
 1. Hangers for Pipe Sizes 1/2 to 1 1/2 Inch: Malleable iron or Carbon steel, adjustable swivel, split ring.
 2. Hangers for Pipe Sizes 2 to 4 Inches and Cold Pipe Sizes 6 Inches and Over: Carbon steel, adjustable, clevis.
 3. Hangers for Hot Pipe Sizes 6 Inches and Over: Adjustable steel yoke, cast iron roll, double hanger.
 4. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods; cast iron roll and stand for hot pipe sizes 6 inches and over.
 5. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
 6. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp; adjustable steel yoke and cast iron roll for hot pipe sizes 6 inches and over.
 7. Vertical Support: Steel riser clamp.
 8. Floor Support for Pipe Sizes to 4 Inches and All Cold Pipe Sizes: Cast iron adjustable pipe saddle, locknut nipple, floor flange, and concrete pier or steel support.
 9. Floor Support for Hot Pipe Sizes 6 Inches and Over: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
 10. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
 11. Shield for Insulated Piping 2 Inches and Smaller: 18 gage galvanized steel shield over insulation in 180 degree segments, minimum 12 inches long at pipe support.
 12. Shield for Insulated Piping 2 1/2 Inches and Larger (Except Cold Water Piping): Pipe covering protective saddles.
 13. Shields for Insulated Cold Water Piping 2 1/2 Inches and Larger: Hard block non conducting saddles in 90 degree segments, 12 inch minimum length, block thickness same as insulation thickness.

14. Shields for Vertical Copper Pipe Risers: Sheet lead

B. HANGER RODS

1. Steel Hanger Rods: Threaded both ends, threaded one end, or continuous threaded.

C. FLASHING

1. Metal Flashing: 26 gage galvanized steel.
2. Lead Flashing: 5 lb./sq. ft. sheet lead for waterproofing; one lb./sq. ft. sheet lead for soundproofing.
3. Flexible Flashing: Minimum 47 mil thick sheet compatible with roofing.
4. Caps: Steel, 22 gage minimum; 16 gage at fire resistant elements.

D. SLEEVES

1. Sleeves for Pipes Through Non Fire Rated Floors: Form with 18 gage galvanized steel.
2. Sleeves for Pipes Through Non Fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Form with steel pipe or 14 gage galvanized steel.
3. Sleeves for Pipes Through Fire Rated and Fire Resistive Floors and Walls, and Fireproofing: Prefabricated fire rated sleeves including seals, UL listed.
4. Sleeves for Round Ductwork: Form with galvanized steel.
5. Sleeves for Rectangular Ductwork: Form with galvanized steel minimum 14 gage.
6. Fire Stopping Insulation: Glass fiber type, non combustible 3M Fire Barrier or Dow Corning RTV foam.
7. Caulk: Of quality specified in Division 7.

E. FABRICATION

1. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
2. Design hangers without disengagement of supported pipe.
3. Provide copper plated hangers and supports for copper piping.

F. FINISH

1. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

PART III - EXECUTION

A. PIPE HANGERS AND SUPPORTS

1. Support horizontal standard weight steel piping and copper piping as follows:

Pipe Size	Steel		Copper		Hanger Rod Diameter
	Water Service (ft.)	Vapor Service (ft.)	Water Service (ft.)	Vapor Service (ft.)	
3/8"	7	8	5	5	3/8"
1/2"	7	8	5	6	3/8"
3/4"	7	9	5	7	3/8"
1"	7	9	6	8	3/8"
1 1/4"	7	9	7	9	3/8"
1 1/2"	9	12	8	10	3/8"
2"	10	13	8	11	3/8"

2 1/2"	11	14	9	13	1/2"
3"	12	15	10	14	1/2"
3 1/2"	13	16	11	15	1/2"
4"	14	17	12	16	5/8"
5"	16	19	13	18	5/8"
6"	17	21	14	20	5/8"
8"	19	24	16	23	3/4"
10"	22	26	18	25	7/8"
12"	23	30	19	28	7/8"

2. Support all fire protection piping per requirements of NFPA.
3. Cast Iron pipe shall be supported with 10' maximum hanger spacing. Provide a minimum of one hanger per pipe section close to the joint on the barrel and also at all changes of direction and branch connections.
4. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
5. Place a hanger within 12 inches of each horizontal elbow.
6. Use hangers with 1 1/2 inch minimum vertical adjustment.
7. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
8. Support all vertical piping at every other floor, except support vertical cast iron pipe at each floor at hub.
9. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
10. Support riser piping independently of connected horizontal piping.

B. EQUIPMENT BASES AND SUPPORTS

1. Provide equipment bases of concrete type specified in Division 3.
2. Provide templates, anchor bolts, and accessories for mounting and anchoring equipment.
3. Construct support of steel members. Brace and fasten with flanges bolted to structure.
4. Provide rigid anchors for pipes after vibration isolation components are installed.

C. FLASHING

1. Provide flexible flashing and metal counterflashing where piping and ductwork penetrate weather or waterproofed walls, floors, and roofs.
2. Flash vent and soil pipes projecting 3 inches minimum above finished roof surface with flexible flashing or lead worked one inch minimum into hub, 8 inches minimum clear on sides with 24 x 24 inches sheet size. For pipes through outside walls, turn flanges back into wall and caulk, metal counterflash and seal.
3. Flash floor drains in floors with topping over finished areas with flexible flashing or lead, 10 inches clear on sides with minimum 36 x 36 inch sheet size. Fasten flashing to drain clamp device.
4. Seal floor, shower and janitor sink drains watertight to adjacent materials.
5. Provide acoustical lead flashing around ducts and pipes penetrating equipment rooms, installed in accordance with manufacturer's instructions for sound control.
6. Provide curbs for mechanical roof installations 12 inches minimum high above roofing surface. Flexible sheet flash and counterflash with sheet metal; seal watertight.

D. SLEEVES

1. Set sleeves in position in formwork. Provide reinforcing around sleeves.

2. Extend sleeves through floors three inch above finished floor level in unfinished areas and flush with wall or floor in finished areas. Caulk sleeves full depth and provide floor plate.
3. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent work with fire stopping insulation and caulk seal. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
4. Install chrome plated steel escutcheons at finished surfaces.

END OF SECTION 15145

SECTION 15190 – FUEL GAS PIPING

PART I - GENERAL

A. SUMMARY

1. Section Includes:
 - a. Natural gas piping.
 - b. Gas valves and regulators.
2. Related Sections:
 - a. Section 09900 - Paints and Coatings
 - b. Section 15050 - Basic Mechanical Materials And Methods

B. REFERENCES

1. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
2. American National Standards Institute (ANSI):
 - a. ANSI B31.9 - Building Services Piping Code.
3. American Society of Mechanical Engineers (ASME):
 - a. ASME B16.3 - Malleable Iron Threaded Fittings.
4. ASTM International (ASTM):
 - a. ASTM A 53 - Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - b. ASTM A 234 - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
5. National Fire Protection Association (NFPA):
 - a. NFPA 54 - National Fuel Gas Code.

C. QUALITY ASSURANCE

1. Certifications:
 - a. Product Certificates: Provide Manufacturer's Certification for gas regulators if required by Authority Having Jurisdictions.
 - b. Welding: Pipe welders shall be certified and bear evidence of certification 30 days prior to commencing work on this project. When directed, welders shall be retested at Contractor's expense when evidence indicates a lack of welder proficiency. Certification will be by Pittsburgh Testing Laboratories or other approved authority.

PART II - PRODUCTS

A. FUEL GAS PIPING (ABOVE GRADE)

1. Piping: Black steel, standard weight, Schedule 40 ASTM A 53.
 - a. Piping 2 inches and smaller: Welded or threaded with malleable iron fittings including couplings.
 - b. Piping 2-1/2 inches and larger: Welded, with butt-welded fittings.
2. Fittings: ASME B16.3, malleable iron or ASTM A 234, forged steel welded type.
 - a. Joints: NFPA 54, threaded or welded to ANSI B31.9, ASME Section 1.

B. GAS SHUT-OFF VALVES

1. Quarter-turn Ball Valve: UL listed for natural gas service or LP gas service as required; threaded ends, with bronze body, chrome plated brass ball, "Teflon" or "TFE" seats and seals, blowout-proof stem, adjustable packing gland, and vinyl-covered steel handle. Provide valves by one of the following:
 - a. Conbraco (Apollo): 80-100 series (1/4"-3")
 - b. Nibco: T-585-70-UL series (1/2"-1"), T-580-70-UL series (1-1/4"-3")

- c. Watts: B6000-UL series (1/4"-4")
- d. Or Architect Approved Equal

C. PRESSURE REGULATORS

- 1. Gas Pressure Reducing Regulators: Provide commercial style regulators manufactured by Sensus-Invensys-Equimeter, Fisher, Actaris, or Architect Approved Equal as scheduled on the drawings. Regulators shall have internal pressure relief valves.

PART III - EXECUTION

A. INSTALLATION

- 1. Plumbing contractor shall verify sizes and loads required for all gas appliances and equipment. Coordinate with gas utility company or supplier the required pressure/water column to successfully operate building.
- 2. Coordinate with gas utility company or supplier location of meter and service entrance to building. Contact and coordinate the installation of the service line and tap of gas main.
- 3. Arrange products to be readily accessible for inspection, testing, and emergency gas shut-off.
- 4. Provide connection to gas consuming appliances and fixtures with flexible tubing/connectors in accordance with gas utility company requirements and appliance manufacturer's written instructions.
- 5. Install interior piping neatly and parallel with, or perpendicular to, lines of the structure. Install pipe hangers as specified in Section 15050 to maintain accurately aligned piping systems, adequately supported both laterally and vertically
- 6. Extend rigid gas piping to exterior gas appliances and install shut-off valve, dirt leg, and union at each appliance.
- 7. Provide flexible gas hose connections to all indoor heating equipment, maximum length of 24".
- 8. Conform to NFPA 54 and applicable local codes.
- 9. Roof Protection: Protect roofing with welding blankets.
- 10. Prime interior gas piping before installation. Complete installation of gas piping before roof deck is painted. Conform to Section 09900 for painting and for touch-up on the job site.
- 11. Prime and paint exterior gas piping before installation. Conform to Section 09900 for painting and for touch-up on the job site.
- 12. Identify interior gas piping with color markings on top of pipe in accordance with ASME A13.1.

PART IV - FIELD QUALITY CONTROL

- 1. Testing:
 - a. Pressure test piping at 60 psig, or as required by Authority Having Jurisdiction if more stringent.
 - b. Maintain full test pressure for a period of 30 minutes, and make visual inspection for tightness of system.
 - c. Test gas piping before connection to the gas source. Do not enclose or conceal any untested portion of the gas system.
 - d. Obtain a certificate of final inspection from the Authority Having Jurisdiction.

END OF SECTION 15190

SECTION 15623 - FORCED AIR FURNACES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Forced air furnaces.
- B. Refrigerant cooling coil and condensing unit.
- C. Controls.

1.02 RELATED SECTIONS

- A. Section 15242 - Vibration Isolation.
- B. Section 15890 - Ductwork.
- C. Section 15985 - Sequence of Operations.

1.03 REFERENCES

- A. ANSI/ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- B. ANSI/ASHRAE - 90A - Energy Conservation in New Building Design.
- C. ANSI/ASHRAE - 103 - Heating Seasonal Efficiency of Central Furnaces and Boilers, Methods of Testing.
- D. ANSI/NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- E. ANSI/UL 207 - Refrigerant - Containing Components and Accessories, Non-Electrical.
- F. ANSI/UL 303 - Refrigeration and Air-Conditioning Condensing, and Air-Source Heat Pump Equipment.
- G. ANSI/Z223.1 (NFPA 54) - National Fuel Gas Code.
- H. ARI 210/240 - Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
- I. ARI 270 - Sound Rating of Outdoor Unitary Equipment.
- J. ASHRAE 14 - Methods of Testing for Rating Positive Displacement Condensing Units.
- K. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.

1.04 SUBMITTALS

- A. Submit shop drawings under provisions of Division 1 Submittals.

- B. Submit shop drawings indicating assembly, required clearances, and location and size of field connections.
- C. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- D. Design Data: Indicate refrigerant pipe sizing.
- E. Manufacturer's Installation Instructions: Indicate rigging, assembly, and installation instructions.

1.05 OPERATION AND MAINTENANCE DATA

- A. Submit operation data under provisions of Division 1 Contract Closeout.
- B. Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with ANSI/ASHRAE 15.

1.07 WARRANTY

- A. Provide five year warranty.
- B. Warranty: Include coverage for heat exchangers and compressors.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Lennox Industries Inc.
- B. Carrier Corp.
- C. Trane Co.
- D. Bryant
- E. Greenheck.
- F. Aanon.

2.02 MANUFACTURED UNITS

- A. Configuration: Counterflow or horizontal type with gas burner and electric refrigeration where noted in schedule on drawings.

- B. Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heat exchanger, burner, controls, air filter, refrigerant cooling coil and outdoor package containing compressor, condenser coil and condenser fan where noted in schedule on drawings.
- C. Construction and Ratings: In accordance with ARI 210/240 and ANSI/UL 207 and ANSI/ UL 303. Testing: ASHRAE 14.
- D. Performance Ratings: Energy Efficiency Rating (EER) not less than requirements of ANSI/ASHRAE 90A; seasonal efficiency to ANSI/ASHRAE 103.

2.03 FABRICATION

- A. Cabinet: Galvanized steel with baked enamel finish, easily removed and secured access doors, glass fiber insulation and reflective liner. Provide weather resistant cabinet for roof mounted units.
- B. Heat Exchanger: Stainless Steel welded construction.
- C. Combustion Chamber: Welded stainless steel or precast refractory.
- D. Supply Fan: Centrifugal type rubber mounted with belt drive, adjustable variable pitch motor pulley.
- E. Motor: 1750 rpm rubber isolated.
- F. Air Filters: 2 inch thick glass fiber, disposable type arranged for easy replacement.

2.04 BURNER

- A. Gas Burner: Induced or power type with adjustable combustion air supply, 5:1 turndown minimum combination gas valve and pressure regulator incorporating manual shut-off, pilot valve, automatic 100 percent shut-off and pilot safety device, and electronic pilot ignition.
- B. Gas Burner Safety Controls: Pilot Safety sensor prevents opening of gas valve until pilot flame is proven and stops gas flow on ignition failure.

2.05 ACCESSORIES

- A. Provide roof curb for unit mounting, minimum 14" high.
- B. Provide intake hood with bird screen.
- C. Provide motorized discharge damper.
- D. Provide disconnect switch and single point electrical connection.

2.06 EVAPORATOR COIL

- A. Coil: Copper tube aluminum fin assembly, galvanized drain pan, drain connection, refrigerant piping connections and factory installed thermostatic expansion valve.

2.07 REFRIGERATION PACKAGE

- A. Compressor: Scroll or Hermetic, 3600 rpm maximum, resiliently mounted integral with condenser, with positive lubrication, crankcase heater, high pressure control, motor overload protection, service valves and drier.
- B. Air Cooled Condenser: Aluminum fin and copper tube coil, with direct drive axial propeller fan resiliently mounted, galvanized fan guard.

2.08 REFRIGERATION OPERATING CONTROLS

- A. Discharge Thermostat: Cycles compressor, condenser fan and supply fan to maintain room temperature setting. See Section 15985 Sequence of Operation for additional information.
- B. Refrigerant Pressure Switch: Cycles condenser fan on when condenser refrigerant pressure is above 285 psig and off when pressure drops below 140 psig.

2.09 OPERATING CONTROLS

- A. Adjustable Discharge Thermostat: Low voltage, to control burner operation, and supply fan to maintain temperature setting. Include system selector switch (heat-off) and fan control switch (auto-on). [Heating and ventilation only.]
- B. Electric solid-state microcomputer based room thermostat with remote sensor; locate as indicated. [Heating, cooling and ventilation only.]
- C. Room thermostat to incorporate:
 - 1. Automatic switching from heating to cooling.
 - 2. Preferential rate control to minimize overshoot and deviation from set point.
 - 3. Set-up for four separate temperatures per day.
 - 4. Instant override of setpoint for continuous or timed period from one hour to 31 days.
 - 5. Short cycle protection.
 - 6. Programming based on weekdays, Saturday and Sunday.
 - 7. Switch selection features including imperial display, 12 hour clock, keyboard disable, remote sensor, fan on-auto.
- D. Room thermostat display to include:
 - 1. Time of day.
 - 2. Actual room temperature.
 - 3. Programmed temperature.
 - 4. Programmed time.
 - 5. Duration of timed override.
 - 6. Day of week.
 - 7. System model indication: heating, cooling, auto, off, fan auto, fan on.
 - 8. State (heating or cooling) operation.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that floors are ready for installation of units and openings are as indicated on shop drawings. Verify that supports for air cooled condensers are completed.
- B. Verify that proper power supply is available for furnace and condenser package.
- C. Verify that proper fuel supply is available for connection.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install to NFPA 90A and ANSI/NFPA 90B.
- C. Install gas fired furnaces to ANSI Z223.1 (NFPA 54).
- D. Mount unit on roof curb.

END OF SECTION 15623

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SECTION 15625 – TUBE HEATERS

PART I - GENERAL

- A. SECTION INCLUDES
 - 1. Tubular infrared heaters.
- B. REFERENCES
 - 1. ANSI/NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
 - 2. ANSI/Z223.1 (NFPA 54) - National Fuel Gas Code.
 - 3. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- C. SUBMITTALS
 - 1. Indicate assembly, required clearances, and location and size of field connections. Provide manufacturer's literature and data indicating rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
 - 2. Operating and Maintenance Data. Include manufacturer's descriptive literature, operating instruction, maintenance and repair data, and parts listing.
- D. WARRANTY
 - 1. Provide five-year warranty under provisions of Division 1.
 - 2. Warranty shall include coverage for heat exchangers.

PART II - PRODUCTS

- A. TUBULAR INFRARED HEATERS
 - 1. Manufacturers:
 - a. Infra-Save
 - b. Co-Ray-Vac
 - c. Roberts Gordon
 - d. Detroit Radiant Products Co.
 - 2. Units: Packaged, factory assembled, pre-wired unit consisting of cabinet, burner, heat exchanger, radiant tube, reflector, controls.
 - 3. Cabinet: Galvanized steel with baked enamel finish.
 - 4. Heat Exchanger: Aluminized steel combustion chamber with steel tube with aluminum reflector.
 - 5. Gas Burner: Forced draft or induced draft type with adjustable combustion air supply, combination gas valve and pressure regulator incorporating manual shut-off, pilot valve, automatic 100 percent shut-off and thermo-couple pilot safety device, electronic pilot ignition.
 - 6. Gas Burner Safety Controls: Thermo-couple sensor prevents opening of solenoid gas valve until pilot flame is proven and stops gas flow on ignition failure.
 - 7. Room Thermostat: Low voltage, to control burner operation.

PART III - EXECUTION

- A. EXAMINATION
 - 1. Verify that space is ready for installation of units and openings are as indicated on shop drawings.
 - 2. Verify that proper power supply is available.
 - 3. Verify that proper fuel supply is available for connection.
- B. INSTALLATION

1. Install in accordance with manufacturer's instructions.
2. Install to NFPA 90A and ANSI/NFPA 90B.
3. Install gas fired units to ANSI Z223.1, NFPA 54 and IRI.
4. Provide vent connections to ANSI/NFPA 211.
5. Install unit heaters with vibration isolation. Refer to Section 15242.
6. Install thermostats in accordance with manufacturer's instructions.
7. Install vent through wall. Ensure proper slope of vent.

END OF SECTION 15625

SECTION 15800 - AIR DISTRIBUTION

PART I - GENERAL

A. SUMMARY

1. Section Includes:
 - a. Metal duct.
 - b. Flexible duct.
 - c. Volume control dampers.
 - d. Flexible duct connections.
 - e. Turning vanes.
 - f. Diffusers, registers and grilles.

B. SUBMITTALS

1. Product Data: Provide for manufactured products and assemblies, and include electrical characteristics and connection requirements.
2. Shop Drawings: Indicate for manufactured products and assemblies, and include electrical characteristics and connection requirements.

C. QUALITY ASSURANCE

1. Comply with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems," unless otherwise indicated.
2. Comply with SMACNA, "HVAC Duct Construction Standards" and "HVAC Air Duct Leakage Test Manual."
3. Comply with ASHRAE 70, "Method of Testing for Rating the Performance of Air Outlets and Inlets."

PART II - PRODUCTS

A. METAL DUCT

1. Galvanized Sheet Steel: ASTM A527, G90 coating designation, lock-forming quality.
2. Joint and Seam Sealant: One part, nonsag, solvent release curing, polymerized butyl sealant, formulated with a minimum of 75% solids. Sealant shall be water resistant, fire resistive, used alone or with tape.

B. FLEXIBLE DUCT

1. Comply with UL 181, Class 1.
2. Factory-fabricated, insulated, round duct with an outer jacket enclosing 1" thick, glass-fiber insulation.
3. Reinforcement: Corrosion resistant wire helix permanently bonded to core.
4. Outer Jacket: Reinforced polyester film laminated to glass mesh.
5. Inner Liner: Polyethylene film.

C. VOLUME CONTROL DAMPERS

1. Fabricate in accordance with SMACNA "HVAC Duct Construction Standards – Metal and Flexible" and as indicated.
2. Fabricate single blade dampers for duct sizes up to 12" x 30".
3. Provide indicating, locking quadrant device on single and multi-blade dampers. Provide device at both ends where damper width exceeds 30".

D. FLEXIBLE DUCT CONNECTIONS

1. UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, approximately 3" wide, crimped into metal edging strip.

- E. TURNING VANES
 - 1. Fabrication: Fabricate and support in accordance with SMACNA “HVAC Duct Construction Standards – Metal and Flexible.”

- F. DIFFUSERS, REGISTERS, AND GRILLES
 - 1. Manufacturer:
 - a. Titus Model indicated on the Drawings.
 - b. Equal by Tuttle & Bailey.
 - c. Equal by Krueger.
 - d. Equal by Carnes.
 - e. Or Architect Approved Equal.
 - 2. Diffusers, registers, and grilles are scheduled on the Drawings.
 - 3. Linear Slot Diffusers: Extruded aluminum, full 180° pattern controller with sealing gasket at top edge of blade, number and size of slots indicated on the drawings.

PART III - EXECUTION

- A. DUCT FABRICATION
 - 1. Fabrication: Fabricate and support in accordance with SMACNA “HVAC Duct Construction Standards – Metal and Flexible” except as indicated.
 - 2. Fittings: Construct tees, bends, and elbows with radius of 1½ times width of duct on center line. Provide turning vanes where possible.
 - 3. Transitions: Increase duct sizes gradually, not exceeding 30° divergence and 45° convergence.
 - 4. Reinforcement: Reinforce in accordance with SMACNA “HVAC Duct Construction Standards – Metal and Flexible” except as indicated.

- B. INSTALLATION
 - 1. Install products in accordance with manufacture’s instructions, allowing access for service and maintenance of dampers, air extractors, and fire dampers.
 - 2. Install diffusers, registers, and grilles with air tight connection to ducts. All flexible duct connections shall be caulked and sealed with a draw band.
 - 3. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
 - 4. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
 - 5. Provide fire dampers at locations indicated. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges.
 - 6. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized equipment.
 - 7. Check location of air outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
 - 8. Adjust diffusers, registers, and grilles to indicated air patterns before starting air balancing.
 - 9. Paint visible duct behind air outlets and inlets matte black, Reference Division 9.

END OF SECTION 15800

SECTION 15870 - POWER VENTILATORS

PART I - GENERAL

- A. WORK INCLUDED
 - 1. Roof exhausters.
 - 2. Wall exhausters.
 - 3. Cabinet exhaust fans.
 - 4. Ceiling exhaust fans.

- B. REFERENCES
 - 1. AMCA 99 - Standards Handbook.
 - 2. AMCA 210 - Laboratory Methods of Testing Fans for Rating Purposes.
 - 3. AMCA 300 - Test Code for Sound Rating Air Moving Devices.
 - 4. AMCA 301 - Method of Publishing Sound Ratings for Air Moving Devices.
 - 5. SMACNA - Low Pressure Duct Construction Standard.

- C. QUALITY ASSURANCE
 - 1. Performance Ratings: Conform to AMCA 210 and bear the AMCA Certified Rating Seal.
 - 2. Sound Ratings: AMCA 301, tested to AMCA 300, and bear AMCA Certified Sound Rating Seal.
 - 3. Fabrication: Conform to AMCA 99.

- D. SUBMITTALS
 - 1. Submit shop drawings and product data under provisions of Section 01300.
 - 2. Provide product data on wall and roof exhausters, and ceiling and cabinet fans.
 - 3. Provide fan curves with specified operating point clearly plotted.
 - 4. Submit sound power levels for both fan inlet and outlet at rated capacity.
 - 5. Submit manufacturer's installation instructions under provisions of Section 01300.

PART II - PRODUCTS

- A. ACCEPTABLE MANUFACTURERS
 - 1. Penn Ventilator Co.
 - 2. Greenheck Fan Corp.
 - 3. Loren Cook Co.
 - 4. ILG Industries Inc.

- B. WALL EXHAUSTERS
 - 1. Centrifugal or Axial Fan Unit: V-belt or direct driven, with spun aluminum or galvanized steel prefinished in baked-on enamel housing; resilient mounted motor; 1/2 inch mesh, 16 gage aluminum birdscreen; square base to suit roof curb with continuous curb gaskets; secured with stainless steel bolts and screws.
 - 2. Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor and multiple speed controller.
 - 3. Backdraft Damper: Gravity or motor activated as scheduled, aluminum multiple blade construction, felt edged with nylon bearings.
 - 4. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

C. CABINET AND CEILING EXHAUST FANS

1. Centrifugal Fan Unit: Direct driven, with galvanized steel housing lined with 1/2 inch acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.
2. Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor and multiple speed controller.
3. Grille: Molded white plastic or aluminum with baked white enamel finish.

PART III - EXECUTION

A. INSTALLATION

1. Install in accordance with manufacturer's instructions.

END OF SECTION 15870

SECTION 15890 - DUCTWORK

PART I - GENERAL

- A. WORK INCLUDED:
1. Low pressure ducts
 2. Fibrous glass ductwork.
 3. Duct cleaning.
- B. REFERENCES:
1. ASHRAE - Handbook 1997 Fundamentals; Chapter 32 - Duct Design.
 2. ASHRAE - Handbook 2000 Equipment; Chapter 1 - Duct Construction.
 3. ASTM A 90 - Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
 4. ASTM A 167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 5. ASTM A 525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
 6. ASTM A 527 - Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dip Process, Lock Forming Quality.
 7. ASTM B 209 - Aluminum and Aluminum Alloy Sheet and Plate.
 8. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
 9. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
 10. SMACNA - HVAC Duct Construction Standards - Metal and Flexible.
 11. SMACNA - Low Pressure Duct Construction Standards.
 12. SMACNA - Fibrous Glass Duct Construction Standards.
 13. UL 181 - Factory-Made Air Ducts and Connectors
- C. DEFINITIONS
1. Duct Sizes: Inside clear dimensions. For lined ducts, maintain sizes inside lining.
 2. Low Pressure: Three pressure classifications: 1/2 inch WG positive or negative static pressure and velocities less than 2,000 fpm; 1 inch WG positive or negative static pressure and velocities less than 2,500 fpm and 2 inch WG positive or negative static pressure and velocities less than 2,500 fpm.
- D. REGULATORY REQUIREMENTS
1. Construct ductwork to NFPA 90A standards.
- E. SUBMITTALS
1. Submit shop drawings and product data under provisions of Section 15000.
 2. Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work for low pressure systems.
 3. Submit manufacturer's installation instructions for glass fiber ducts under provisions of Section 15000.
 4. Submit manufacturer's certificate under provisions of Section 15000 that installation of glass fiber ducts meets or exceeds recommended fabrication and installation requirements.
- F. DELIVERY, STORAGE, AND HANDLING
1. Deliver products to site under provisions of Division 1.
 2. Store and protect products under provisions of Division 1.

PART II - PRODUCTS

- A. MATERIALS
1. General: Non-combustible or conforming to requirements for Class 1 air duct materials, or

- UL 181.
2. Steel Ducts: ASTM A525 or ASTM A527 galvanized steel sheet, lock-forming quality, having zinc coating of 1.25 oz per sq ft for each side in conformance with ASTM A90.
 3. Aluminum Ducts: ANSI / ASTM B209; aluminum sheet, alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T6 or of equivalent strength.
 4. Flexible Ducts: Interlocking spiral of galvanized steel or aluminum construction or fabric supported by helically wound spring steel wire or flat steel bands; rated to 2 inches WG positive and 1.5 inches WG negative for low pressure ducts.
 5. Insulated Flexible Ducts: Flexible duct wrapped with flexible glass fiber insulation, enclosed by seamless aluminum pigmented plastic vapor barrier jacket; maximum 0.23 K value at 75 degrees F..
 6. Fibrous Glass Ducts: UL 181; one inch thick rigid glass fiber with aluminum foil, glass scrim and kraft or plastic jacket vapor barrier; maximum 0.23 K value at 75 degrees F.
 7. Fasteners: Rivets, bolts, or sheet metal screws.
 8. Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.
 9. Hanger Rod: Steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

B. LOW PRESSURE DUCTWORK

1. Fabricate and support in accordance with SMACNA Low Pressure Duct Construction Standards and ASHRAE handbooks, except as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
2. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts. No variation of duct configuration or sizes permitted except by written permission.
3. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. where not possible and where rectangular elbows are used, provide air foil turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.
4. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.
5. Provide easements where low pressure ductwork conflicts with piping and structure. Where easements exceed 10 percent duct area, split into two ducts maintaining original duct area.
6. Connect flexible ducts to metal ducts with draw bands.
7. Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.
8. Use double nuts and lock washers on threaded rod supports.

C. FIBROUS GLASS DUCTS

1. Fabricate and install in accordance with SMACNA Fibrous Glass Duct Construction Standards, except as indicated.
2. Machine fabricate fibrous glass ducts and fittings. Make only minor on site manual adjustments.
3. Staple duct joints and tape with 3 inch wide head activated chemical bonding tape.
4. Do not use fibrous glass ducts within 12 inches of electric or fuel fired heaters.

PART III - EXECUTION

A. INSTALLATION

1. Obtain manufacturer's inspection and acceptance of fabrication and installation of glass fiber ductwork at beginning of installation.
2. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pitot tube openings where required for testing of systems, complete with metal can

with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.

3. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
4. Set plenum doors 6 to 12 inches above floor. Arrange door swings so that fan static pressure holds door in closed position.
5. Connect diffusers or troffer boots to low pressure ducts with 5 feet maximum length of flexible duct. Hold in place with strap or clamp.
6. Fibrous glass ductwork may be substituted for internally or externally insulated or uninsulated low pressure sheet metal ductwork.
7. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

B. DUCTWORK APPLICATION SCHEDULE

AIR SYSTEM	MATERIAL
Low Pressure Supply	Steel
Transfer	Fiberglass
Return	Steel
General Exhaust	Steel
Locker Exhaust	Aluminum
Outside Air Intake	Steel
Combustion Air	Steel

C. ADJUSTING AND CLEANING

1. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.

END OF SECTION 15890

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SECTION 15950 - TESTING, ADJUSTING, AND BALANCING

PART I - GENERAL

- A. SUMMARY: Section Includes:
 - 1. Adjust HVAC systems to provide indicated quantities according to specified tolerances.
- B. DEFINITIONS
 - 1. AABC: Associated Air Balance Council.
- C. SUBMITTALS
 - 1. Review Report: Within 45 days, submit 3 copies of the system design review report including recommendations.
 - 2. Strategies and Procedures Plan: Within 60 days, submit 3 copies of the strategies and step-by-step procedures. Include a complete set of sample report forms.
 - a. Report Forms: Use standard forms from AABC's "National Standards for Testing, Adjusting, and Balancing".
 - 3. Certified Reports: Submit 3 copies of reports prior to final acceptance of Project.
- D. QUALITY ASSURANCE
 - 1. Agent Qualifications: Engage a testing, adjusting, and balancing agent certified by AABC.
 - 2. Instrumentation Type, Quantity, and Accuracy: As described in AABC national standards.
 - 3. Instrumentation Calibration: Calibrate instruments at least every 6 months or more frequently if required by the instrument manufacturer.
- E. COORDINATION
 - 1. Coordinate the efforts of factory-authorized service representatives for systems and equipment, HVAC controls installers, and other mechanics to operate HVAC systems and equipment to support and assist testing, adjusting, and balancing activities.
 - 2. Perform testing, adjusting, and balancing after leakage and pressure tests on air and water distribution systems have been satisfactorily completed.
- F. WARRANTY
 - 1. Opposite Season Test: Perform an inspection and adjustment during the opposite season that initial testing, adjusting and balancing was conducted to produce optimum system operation.

PART II - EXECUTION

- A. EXAMINATION AND PREPARATION
 - 1. Prior to installation, review system designs for types, quantities, and locations of balancing devices. Recommend changes and additions to systems' balancing devices to ensure proper testing, adjusting, and balancing of systems including general access.
 - 2. Verify that manufacturer's approved representative has performed all equipment startup services.
 - 3. Before commencing work, verify that systems are complete and operational. The onset of work means acceptance of existing conditions.
 - 4. Prepare test reports, a testing, adjusting, and balancing plan including strategies, plan to simulate diversity, readiness checks, step-by-step procedures, etc. Prepare schematic diagrams of systems' "as-built" duct layouts and determine the best locations in main and branch ducts for accurate duct airflow measurements.
- B. GENERAL PROCEDURES
 - 1. Perform testing and balancing procedures on each system, according to AABC national standards and this Section, to provide designed supply, return, and exhaust air quantities.

- a. Traverse entire cross sectional area of duct.
- b. Use volume control devices to regulate air quantities without creating objectionable air motions or sound levels.
- c. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary to allow adequate performance of procedures. After testing and balancing, close probe holes and patch insulation with new materials identical to those removed. Restore vapor barrier and finish according to the insulation Specifications for this Project.
- d. Mark equipment settings with paint or other suitable, permanent identification material, including damper-control positions, valve indicators, fan-speed-control levers, and similar controls and devices, to show final settings. Use lockout devices where applicable.
- e. The entire system shall be manually balanced as a constant volume system. Airflows shall be reduced according to the system diversity.
- f. Each air terminal shall be balanced according to the VAV system requirements.

C. CONSTANT-VOLUME AIR SYSTEMS' BALANCING PROCEDURES

1. Adjust fans to deliver total design airflows including drive changes as required.
 - a. Measure static pressure across each air-handling unit component.
 - (1) Simulate dirty filter operation and record the point at which maintenance personnel must change filters.
 - b. Adjust volume dampers for main duct, submain ducts, and major branch ducts to design airflows within specified tolerances.
 - c. Measure terminal outlets and inlets without making adjustments.
 - (1) Measure terminal outlets using a direct-reading hood or the outlet manufacturer's written instructions and calculating factors.
 - d. Adjust terminal outlets and inlets for each space to design airflows within specified tolerances of design values. Make adjustments using volume dampers rather than extractors and the dampers at the air terminals.
 - (1) Adjust patterns of adjustable outlets for proper distribution without drafts.

D. TOLERANCES

1. Air Handling Systems: Adjust to within plus or minus 5 percent of design.
2. Air Outlets and Inlets: Adjust to within plus or minus 5 percent of design.

E. REPORTING

1. Provide typewritten or letter-quality computer printout test reports bound in a 3-ring binder, tabulated and divided into sections by system. As a minimum, include reports for the following:
 - a. Manufacturers' technical data for all equipment.
 - b. Summary of system performance versus original design.

END OF SECTION 15950

SECTION 16000 – ELECTRICAL GENERAL PROVISIONS

PART I - GENERAL

A. SCOPE

1. Furnish all materials, labor, tools, transportation, incidentals and appurtenances to complete in every detail and leave in working order all items of work called for herein or shown on Drawings.
2. Include any minor items of work necessary to provide a complete and fully operational electrical system.

B. GENERAL REQUIREMENTS

1. The Electrical Contractor must read the entire Specifications covering other branches of work. He is responsible for coordination of his work with work performed by other trades.
2. Consult all contract Drawings which may affect the location of any equipment or apparatus furnished under this work and make minor adjustments in location as necessary to secure coordination.
3. The layout shown on the Drawings is based on a particular make of equipment. If another make of equipment is used which requires modification or changes of any description from the Drawings or Specifications, Contractor shall be responsible (as a part of this work) for making all such modifications and changes, including those involving other trades, with the cost thereof included in his Bid.
4. Contractor is to contact the Architect immediately if he notices any discrepancies or omissions in either the Drawings or the Specifications.
5. Submit all changes, other than minor adjustments, to the Architect for approval before proceeding with the work.
6. The Contractor is required to visit the site and fully inform himself concerning dimensions, existing conditions and all other conditions affecting the scope of work. Failure to visit the site shall not relieve the Contractor from any responsibility in the performance of this work.
7. All workmanship is to be of the highest quality in accordance with the best practices of the trade and performed by craftsmen skilled in this particular work.
8. Contractor is to have a competent superintendent in charge of the work installed under this Contract. Superintendent is to be experienced in this type of work.

C. PERMITS, INSPECTIONS AND CODES

1. File all Drawings, pay all fees and obtain all necessary permits and certificates of inspection relative to this work.
2. Completed installation shall conform with all applicable Federal, State and Local Laws, Codes and Ordinances including but not limited to the latest editions of the following:
 - a. Ohio Building Code (OBC)
 - b. Specific Construction Safety Requirements, State Industrial Commission
 - c. National Electrical Code (NFPA-70)
 - d. Life Safety Code NFPA 101
 - e. Occupational Safety and Health Act (OSHA) and all amendments thereto
 - f. Local Codes
3. Nothing contained in the Drawings and Specifications shall be construed to conflict with these laws, codes and ordinances and they are hereby included in these Specifications.

D. ELECTRICAL MOTORS

1. In general, motors will be furnished and installed under other Divisions of work as a factory installed item. Unless factory installed on the unit, all wiring, motor starters, safety disconnect switches or combinations starter/disconnect switches shall be furnished and installed by the Electrical Contractor.

E. DISCONNECT SWITCHES

1. In general, disconnect switches shall be installed in accordance with national and local codes. Disconnect switches that are installed at air conditioners, heat pumps, central cooling and other types of equipment shall be fused or non-fused in accordance with the equipment's nameplate requirements per N.E.C.

F. RECORD DRAWINGS

1. Record any changes in location of concealed boxes, service runs and similar construction on a set of prints and deliver them upon completion of the work to the Associate.
2. Record location and depth of exterior work carefully for future reference.

G. INSPECTION

1. Contractor arranges for and includes in his bid, inspection of this work by Local Code Authority.

H. GUARANTEE

1. Contractor is responsible for all defects, repairs and replacements in materials and workmanship for a period of one (1) year after final payment is approved by the Architect.

I. MANUALS

1. Manuals shall be loose leaf, three-ring, hard-cover binders. Material shall be typewritten or printed and be fully legible. Each section shall be divided by labeled tabs.
2. Include the following items, together with any other necessary pertinent data, in each Manual:
 - a. Each manual to be labeled on front cover with project name, Contract, Contractor's name, Associate Architect, Engineer, and date of project completion.
 - b. Description of systems.
 - c. Manufacturer's names, nearest Factory Representative, and model and serial number of components of systems.
 - d. Operating instructions, start-up and shut-down procedures.
 - e. Maintenance instructions. Include routine and emergency service information.
 - f. Servicing instructions.
 - g. Parts list with numbers of replaceable items, including sources of supply.
 - h. Manufacturers' literature describing each piece of equipment.
 - i. One approved copy of each shop drawing submitted.
 - j. Written warranties.
 - k. Wiring diagrams.
 - l. Copy of Contractor's statement indicating all systems have been tested, are operational and fulfill the requirements of the Contract.
 - m. Routine and 24-hour emergency service/repair information.
 - n. One typewritten directory for each panelboard.
 - o. Copy of Approved Certificate of Final Inspection.
 - p. Certificate of Material Receipt for all spare parts.
 - q. Certificate of System Completion where specified.

PART II - PRODUCTS

A. MATERIALS

1. Furnish new and undeteriorated materials of a quality not less than what is specified.
2. Contractor is to furnish and install only those brands of equipment specifically or accepted as substitutions.

B. EQUIPMENT SELECTION AND APPROVAL

1. The selection of materials and equipment to be furnished shall be governed by the following:
 - a. Where trade names, brands of manufacturer of equipment or materials are listed in the Specification, the exact equipment listed shall be used in the bid. Where more than one name is listed, Contractor may select any one of the several brands specified.
 - b. Within ten (10) days after the award of contracts, the Contractor must submit a list to the Architect showing the names of manufacturers and subcontractors he intends to use.

C. SUBSTITUTIONS

1. Contractor must base his bid on furnishing the brands of material and equipment listed in the Specifications. Any and all substitutions shall be approved by the Architect.

PART I - EXECUTION

A. PROTECTION AND CLEANING

1. Protect all fixtures against damage from leaks or abuse and pay the cost of repair or replacement of fixtures or equipment made necessary by failure to provide suitable safeguards or protection.
2. After all equipment has been inspected and approved, thoroughly clean all equipment provided under this work.
3. After all fixtures have been installed, thoroughly clean all fixtures, remove all stickers visible after installation and/or as directed by the Architect, remove foreign matter and leave every part in acceptable conditions, clean and ready for use.
4. All scratches and chipped prime or finish coats on all electrical equipment are to be touched-up with matching paint. All dents in all electrical equipment are to be removed and the prime or finish coats touched-up. If damage is excessive, replacement may be required.

B. CUTTING AND PATCHING

1. Cut as necessary to install new equipment. Avoid cutting of concrete, masonry, and other work by use of inserts and sleeves
2. Patching must match existing surfaces in kind and finish and shall be done by Electrical Contractor.

C. EXCAVATION AND BACKFILL

1. Provide any trenching and backfill required to install underground utility service or wiring. Remove forms and debris before backfilling. Tamp and compact backfill to bring level with existing grade. See General Specification, Excavation and Backfill Section for the percentage of compaction of the backfill required. Failure to achieve this percentage will require removal of backfill installed and new backfill installed.

D. FOUNDATIONS AND SUPPORTS

1. Electrical Contractor is fully responsible for the installation of the concrete pads, conduit encasement, and pole bases. All other concrete work is the responsibility of the General Contractor. Coordinate exact foundation, curb and pad sizes with General Contractor.
2. Install welded steel frames for equipment and auxiliary steel supports as necessary. Use black steel or channel iron coated with primer and finish coat; weatherproof with coating of bitumastic where supports are exposed to elements.
3. Obtain Architect's approval for the use of power actuated fasteners and use only in locations as directed.

E. CONDUIT SLEEVES

1. Sleeves shall be installed by this Contractor in all walls and floors where conduits or raceways are to pass through.
2. Sleeves through fire rated construction shall be packed with calcium silicate, silicone "RTV" foam, or "3M" fire rated sealants, caulking, putty strips and sheets.
3. Where openings in floors and walls are required and sleeves were not installed, this Contractor shall be responsible for cutting and sealing all required openings with rotary type drill, or other method approved by the Architect. Holes cut with pneumatic hammer will not be acceptable.

END OF SECTION 16000

SECTION 16060 - WIRED GROUND SYSTEM

PART I GENERAL

A. SCOPE

1. Furnish and install a complete grounding system as shown on the Drawings and specified herein
2. Grounding system shall be in compliance with all requirements of the National Electrical Code.

PART II PRODUCTS

A. GROUNDING DEVICES

1. Grounding conductors shall be furnished in accordance with SECTION 16120, WIRE AND CABLE. UL listed, electrically-operated, mechanically held, or electrically held, as indicated on
2. Grounding footings for bonding pipes or conduits shall be UL Listed, similar to T & B Series 2 or Series 3902.
3. Grounding pigtails for receptacles and switches shall be Steel City GSC-12 or equal.

PART III EXECUTION

A. INSTALLATION

1. Grounding of the service and service entrance shall be in accordance with Article 230 and 250 of the National Electrical Code.
2. All receptacles and switches shall be bonded to a ground conductor using a #12 AWG minimum bonding jumper between receptacle or switch terminal and ground conductor. Metal-to-metal contact between the device yoke and the outlet box is not acceptable for the surface mounted boxes or flush type boxes. Ground the outlet box with a grounding pigtail connected to the ground conductor.
3. The grounding electrode conductor that bonds together the Grounding Electrode System shall be sized per table 250-94 and shall be run in Schedule 40 PVC.
4. Lighting fixtures shall be grounded by the use of a pigtail fastened on bare metal that is free of paint.

END OF SECTION 16060

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SECTION 16080 - TESTS, ADJUSTMENTS AND INSPECTIONS

PART I - GENERAL

A. SCOPE

1. The Contractor shall perform or make arrangements for electrical systems and equipment tests, and for required inspections as specified herein
2. The Contractor shall make adjustments to the electrical system to obtain proper system operation as described herein.

PART II - PRODUCTS (NOT APPLICABLE)

PART III - EXECUTION

A. REQUIRED INSPECTIONS

1. On-going inspections shall be performed by:
 - a. Local or State inspection authority having jurisdiction or
 - b. Private inspection agency.
2. Contractor shall include the cost of any inspection fees in his Bid.
3. Furnish approved Certificate of Final Inspection to Owner or his representative.

B. TESTS DURING CONSTRUCTION

1. During the course of this work, the Contractor shall perform tests as described herein. A written record shall be kept which summarizes the tests by indicating the date and time, the individual(s) performing the test, and the test results. These written records shall be submitted to the Owner's Representative if requested or where indicated herein.
2. Test for proper direction of rotation and for current balance at all motors. Direction of rotation shall be as instructed by the Contractor furnishing the motor driven equipment or as indicated on the equipment. Current balance shall be tested by using a clamp-on ammeter. Current in any leg shall be within 5% of the average value of the three legs.
3. System grounding electrode resistance shall be tested. Test shall be three terminal "fall-of-potential" method utilizing equipment manufactured by the James G. Biddle Company. Test shall follow the manufacturer's recommended procedure. Maximum acceptable resistance shall be 10 ohms.
4. All connections of conductors to mechanical compression lugs shall be properly torqued in accordance with equipment labels or manufacturer's recommendations. Torque wrench with the proper range shall be used during installation. Where the equipment does not have labels indicating recommended torque, the Contractor shall make a written record of the torque applied and submit this information to the Owner before final payment is made.
5. The Contractor shall test for proper operation of all lights, receptacles, heating equipment and other equipment or systems to which power is connected as a part of this work. The Contractor is only responsible for verifying that the proper power is supplied to systems or equipment furnished by other trades.
6. Test all service entrance conductors for continuity to insure that all circuits are properly connected in accordance with the Drawings. Test all service entrance 600 volt cables with a Contractor furnished 500 volt megger between conductors and between each conductor and ground; continue test until readings are steady (minimum of one minute). Minimum acceptable reading 100 megohms.
7. Where parallel conductors are used as current carrying path, proper load sharing shall be tested. Current measured in any parallel conductor shall be within 2-1/2% of the average value carried by each of the parallel conductors. Measurement shall be made using a digital clamp-on ammeter having a minimum AC accuracy of 0.5% +/- 1 digit at 60Hz.

8. Perform other tests which may be described in individual sections of this specification.
9. Balance of panelboards so that the maximum deviation of any one phase from the average of all the phases shall not exceed 10%. Notify Engineer of all panelboards which cannot be balanced within this tolerance. Rebalance at the direction of the Engineer if required. Retype circuit directory if required to indicate correct circuiting after panelboards have been balanced.

C. **ADJUSTMENTS**

1. Adjustments or corrections shall be made immediately where equipment does not operate properly or where operation is outside of the parameters specified herein.
2. If the grounding electrode system resistance specified cannot be met, the Owner's Representative should be notified before taking correction action.

END OF SECTION 16080

SECTION 16111 - CONDUIT

PART I - GENERAL

- A. WORK INCLUDED
 - 1. Rigid metal conduit and fittings.
 - 2. Electrical metallic tubing and fittings.
 - 3. Flexible metal conduit and fittings.
 - 4. Liquidtight flexible metal conduit and fittings.
 - 5. Non-metallic conduit and fittings.

- B. SCOPE
 - 1. All branch circuit wiring in plenum areas shall be enclosed in metallic raceway with continuous grounding.
 - 2. All conduit shall be U.L. listed and labeled.
 - 3. Note: Conduit is not required for branch circuit wiring. Refer to Wire & Cable Section 16120 for additional information on branch circuit wiring.

PART II - PRODUCTS

- A. RIGID METAL CONDUIT (RMC) AND FITTINGS
 - 1. Rigid Steel Conduit: ANSI C80.1.
 - 2. Fittings and Conduit Bodies: ANSI/NEMA FB 1; threaded type, material to match conduit. Connections to equipment to be done with double locking nuts and contain a PVC screw type insulating bushing.
 - 3. Manufacturer: Allied Tube & Conduit; Triangle PWC Inc. or Wheatland Tube Co.

- B. ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS
 - 1. EMT: ANSI C80.3. galvanized tubing.
 - 2. Fittings and Conduit Bodies: ANSI/NEMA FB 1; or malleable iron, set screw type with insulated throat.
 - 3. Manufacturer: Allied Tube & Conduit; Triangle PWC Inc. or Wheatland Tube Co.

- C. FLEXIBLE METAL CONDUIT AND FITTINGS
 - 1. Conduit: Steel.
 - 2. Fittings and Conduit Bodies: ANSI/NEMA FB 1 with insulated throat.
 - 3. Manufacturer: Alfex Corp.; Carol Cable Co., Inc. or Coleman Cable System Inc.

- D. LIQUIDTIGHT FLEXIBLE CONDUIT AND FITTINGS
 - 1. Conduit: Flexible metal conduit with PVC jacket.
 - 2. Fittings and Conduit Bodies: ANSI/NEMA FB 1 with insulated throat.
 - 3. Manufacturer: Alfex Corp.; Carol Cable Co., Inc. or Coleman Cable System Inc.

- E. ELECTRICAL PLASTIC TUBING AND FITTINGS
 - 1. EPT: NEMA TC 2; PVC Schedule 40.
 - 2. Fittings and Conduit Bodies: NEMA TC 3.

- F. CONDUIT SUPPORTS
 - 1. Conduit Clamps, Straps, and Supports: Steel or malleable iron.

PART III - EXECUTION

- A. CONDUIT SIZING, ARRANGEMENT, AND SUPPORT
 - 1. Size conduit for Type THHN conductors; 1/2 inch minimum size.

2. Arrange conduit to maintain headroom and present a neat appearance. Conceal in all finished areas. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.
3. Maintain 6" clearance between conduit and piping. Maintain 12" clearance between conduit and heat sources such as flues, steam pipes, and heating appliances.
4. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized straps, lay-in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers.
5. Group conduit in parallel runs where practical and use conduit rack constructed of steel channel with conduit straps or clamps. Provide space for 25 percent additional conduit. Each rack is to be supported by a minimum of two supports.
6. Do not fasten conduit with wire, perforated pipe straps or use ceiling grid system. Remove all wire used for temporary conduit support during construction before conductors are pulled. All conduits shall be mounted to structure using rigid supports.
7. Support conduit at a maximum of 10 feet on center.

B. CONDUIT INSTALLATION

1. Cut conduit square using a saw or pipecutter; de-burr cut ends.
2. Bring conduit to the shoulder of fittings and couplings and fasten securely.
3. Use conduit hubs for fastening conduit to cast boxes, and for fastening conduit to sheet metal boxes in damp or wet locations.
4. Install no more than the equivalent of four 90-degree bends between boxes.
5. Use conduit bodies to make sharp changes in direction, as around beams.
6. Use hydraulic one-shot conduit bender or factory elbows for bends in 2" or larger conduit.
7. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.
8. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture.
9. Provide minimum of 130 lb. pull string in empty conduit, except sleeves and nipples.
10. Install expansion joints where conduit crosses building expansion joints.
11. Where conduit penetrates fire-rated walls or floors, provide pipe sleeve two sizes larger than conduit; pack void and fill ends with fire-resistive compound.
12. Route conduit through roof openings for piping and ductwork where possible; otherwise, route through roof jack with pitch pocket.
13. Maximum Size Conduit in Slabs Above Grade: 1/2 inch. Do not route conduits to cross each other in slabs above grade.
14. Use rigid factory elbows for bends in plastic conduit runs.
15. Wipe plastic conduit clean and dry before joining. Apply full even coat of cement to entire area that will be inserted into fitting.

C. CONDUIT INSTALLATION SCHEDULE

1. Underground installations more than 5 feet from foundation wall: PVC Schedule 40 plastic conduit. (Type UF cable is acceptable for underground wiring for site lighting only if approved by local code officials. Provide PVC sleeves under all paved areas, concrete encased under driveways and parking areas).
2. PVC Schedule 40 plastic conduit is approved for use for service entrance cables including primary electric, telephone and cable television. Coordinate installation with utility companies.
3. Secondary electric service cables from transformer to Main Switchboard: Rigid steel conduit or PVC Schedule 40.
4. In Slab Above Grade: Rigid steel conduit or PVC Schedule 40.
5. Panel feeders and mechanical equipment: Rigid steel conduit or electrical metallic tubing.
6. Exposed Dry Interior Locations including mechanical rooms and electrical rooms: Rigid steel conduit or electrical metallic tubing.
7. Branch circuits: Electrical metallic tubing or flexible metal conduit. Note: Branch circuit wiring may be non-metallic sheathed cable if approved by local code.

8. Rooftop and exterior ground mounted equipment connections: Rigid steel conduit or liquid tight flexible conduit.
9. Make-up connections to mechanical equipment: Flexible metal conduit.

END OF SECTION 16111

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SECTION 16120 - WIRE AND CABLE, 600 VOLTS AND BELOW

PART I - GENERAL

- A. SCOPE
 - 1. Furnish and install necessary wire and cable for electrical power and distribution and lighting systems as shown on the Drawings and specified herein.

- B. RELATED WORK
 - 1. SECTION 16080 - TESTS, ADJUSTMENT & INSPECTIONS
 - 2. SECTION 16130 - CONDUITS, BOXES AND RACEWAYS
 - 3. SECTION 16060 - WIRED GROUND SYSTEM

- C. QUALITY ASSURANCE
 - 1. All wire, cable and pulling compounds shall be U.L. listed.
 - 2. Insulation types, ratings and usage shall be in accordance with N.E.C. requirements.

PART II - PRODUCTS

- A. 600 VOLT WIRE
 - 1. All conductors shall be soft drawn annealed copper.
 - 2. Insulation shall be 600 volt rated, flame retardant, moisture and heat resistant, Type XHHW, or THWN/THHN
 - 3. Conductors size 14 AWG and larger shall be stranded.
 - 4. Single control conductors shall be stranded 14 AWG (min.)
 - 5. Power wiring to be color coded as follows: 120/208 Volt System
 - a. NeutralWhite
 - b. Phase A or L1Black
 - c. Phase B or L2Red
 - d. Phase C or L3Blue
 - e. GroundGreen
 - 6. Color coding shall occur at all conductor termination points and in all junction boxes and pullboxes. Identification may be by colored insulation or colored electrical tape at the Contractor's option.

- B. MAKEUP CORDS
 - 1. All conductors shall be extra flexible stranded soft drawn annealed copper.
 - 2. All insulation shall be 600 volt rated, 105 degrees C., dry, 60 degrees C. water resistant, heat resistant, rubber insulated, portable cable with neoprene jacket, Type SO, STO, SOOW-A.
 - 3. All cords shall include a separate insulated equipment grounding conductor.

- C. ARMORED CABLE-BRANCH CIRCUITS
 - 1. All conductors shall be soft drawn annealed copper.
 - 2. Cable shall include a green separate insulated equipment grounding conductor.
 - 3. Cable shall be galvanized steel interlocked armor over the multi-conductor assembly
 - 4. Minimum conductor size shall be 12 AWG solid or stranded.

- D. NONMETALLIC SHEATHED CABLE TYPE NM & NMC (ROMEX) – BRANCH CIRCUITS
 - 1. All conductors shall be soft drawn annealed copper.
 - 2. Cable shall include a separate bare equipment grounding conductor.
 - 3. Cables shall be PVC jacketed over the multi-conductor assembly.
 - 4. Minimum conductor size shall be 12 AWG solid or stranded.

- E. FIRE PROTECTIVE SIGNALING CABLE
 - 1. Conductors shall be solid copper, PVC insulated conductors cabled, with red PVC outer jacket.
 - 2. Conductors shall be size 18 AWG minimum. Sizes shall be determined by fire protection equipment supplier/installer to minimize voltage drop for long runs.

PART III - EXECUTION

- A. 600 VOLT WIRE INSTALLATION
 - 1. Type XHHW or THWN insulation must be used for all conductors installed in wet locations. This includes all outdoor feeders and branch circuits, underground conduit runs and conduits run in slab on grade. Type THHN or XHHW shall be used for all dry locations. Wet and dry locations shall be as defined by the N.E.C.
 - 2. Unless otherwise noted, minimum wire size for lighting and power branch circuits shall be No. 12 AWG. For control and auxiliary systems, the min. size shall be No. 14 AWG.
 - 3. Conductors for emergency power and exit wiring shall be minimum #10.
 - 4. All wiring shall be installed in ½" conduit minimum.
 - 5. All wiring installed under computer room raised access flooring shall be installed in EMT or liquid-tight flexible steel conduit regardless of voltage or purpose.
- B. MAKEUP CORDS INSTALLATION
 - 1. Cords not furnished by the manufacturer of the equipment shall be furnished by this Contractor to provide a complete installation.
- C. ARMORED CABLE-BRANCH CIRCUITS INSTALLATION
 - 1. Comply with NEC Article 333 for uses permitted, uses not permitted and installation requirements.
- D. NONMETALLIC SHEATHED CABLE – TYPE NM AND NMC (ROMEX) – BRANCH CIRCUIT INSTALLATIONS
 - 1. Comply with NEC Article 336 for uses permitted, uses not permitted and installation requirements.

END OF SECTION 16120

SECTION 16123 - BUILDING WIRE AND CABLE

PART I - GENERAL

- A. SECTION INCLUDES
 - 1. Building wire and cable.
 - 2. Nonmetallic-sheathed cable.
 - 3. Underground feeder and branch circuit cable.
 - 4. Service entrance cable.
 - 5. Armored cable.
 - 6. Metal clad cable.
 - 7. Wiring connectors and connections.

- B. RELATED SECTIONS
 - 1. Section 16111 - Conduit.
 - 2. Section 16130 - Boxes.
 - 3. Section 16195 - Identification.

- C. REFERENCES
 - 1. ANSI/NFPA 70 - National Electrical Code.

- D. SUBMITTALS
 - 1. Submit under provisions of Division 1.
 - 2. Product Data: Provide for each cable assembly type.
 - 3. Test Reports: Indicate procedures and values obtained.
 - 4. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

- E. QUALIFICATIONS
 - 1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 5 years documented experience.

- F. REGULATORY REQUIREMENTS
 - 1. Conform to requirements of ANSI/NFPA 70.
 - 2. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

- G. PROJECT CONDITIONS
 - 1. Verify exact measurements in field.
 - 2. Conductor sizes are based on copper. Aluminum conductors will not be allowed.
 - 3. Wire and cable routing shown on Drawings is approximate. Route wire and cable as required to meet Project Conditions.
 - 4. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

- H. COORDINATION
 - 1. Coordinate Work under provisions of Division 1.
 - 2. Determine required separation between cable and other work.
 - 3. Determine cable routing to avoid interference with other work.

PART II - PRODUCTS

- A. BUILDING WIRE AND CABLE
 - 1. Description: Stranded conductor insulated wire.
 - 2. Conductor: Copper.

3. Insulation Voltage Rating: 600 volts.
 4. Insulation: ANSI/NFPA 70, Type THHN/THWN.
- B. NONMETALLIC-SHEATHED CABLE
1. Description: ANSI/NFPA 70, Type NM.
 2. Conductor: Copper.
 3. Insulation Voltage Rating: 600 volts.
- C. UNDERGROUND FEEDER AND BRANCH CIRCUIT CABLE
1. Description: ANSI/NFPA 70, Type UF.
 2. Conductor: Copper.
 3. Insulation Voltage Rating: 600 volts.
 4. Insulation Temperature Rating: 90 degrees C.
- D. SERVICE ENTRANCE CABLE
1. Description: ANSI/NFPA 70, Type SE.
 2. Conductor: Copper.
 3. Insulation Voltage Rating: 600 volts.
 4. Insulation: Type XHHW.
- E. ARMORED CABLE
1. Description: ANSI/NFPA 70, Type AC.
 2. Conductor: Copper
 3. Insulation Voltage Rating: 600 volts.
 4. Insulation Temperature Rating: 75 degrees C.
 5. Insulation Material: Thermoplastic.
- F. METAL CLAD CABLE
1. Description: ANSI/NFPA 70, Type MC.
 2. Conductor: Copper.
 3. Insulation Voltage Rating: 600 volts.
 4. Insulation Temperature Rating: 75 degrees C.
 5. Insulation Material: Thermoplastic.
 6. Armor Material: Steel.
 7. Armor Design: Corrugated tube.
 8. Jacket: PVC.
- G. INSULATION COLOR CODE
1. All wire shall have factory colored insulation as follows:

	208Y / 120V	480Y/277V
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Gray
Ground	Green	Green
Emergency	Same as normal, but with ½-inch red tape wrapped twice around wire at a maximum 12-inch intervals at access points	
 2. Emergency Same as normal, but with ½-inch red tape wrapped twice around wire at a maximum 12-inch intervals at access points.
 3. Conductors larger than #8 AWG that are not factory color coded shall be marked with colored tape at accessible locations.
- H. WIRING CONNECTORS
1. Split Bolt Connectors:
 - a. Blackburn.
 - b. Burndy.
 - c. Panduit.
 - d. Substitutions: Under provisions of Division 1.

2. Solderless Pressure Connectors:
 - a. Blackburn.
 - b. Burndy.
 - c. Panduit.
 - d. Substitutions: Under provisions of Division 1.
3. Insulated spring wire connectors:
 - a. 3M "Scotchlok".
 - b. Ideal Co. "Wingnut".
 - c. T&B "Piggy".

PART III - EXECUTION

A. EXAMINATION

1. Verify that interior of building has been protected from weather.
2. Verify that mechanical work likely to damage wire and cable has been completed.

B. PREPARATION

1. Completely and thoroughly swab raceway before installing wire.

C. WIRING METHODS

1. Concealed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
2. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
3. Above Accessible Ceilings: Use only building wire, Type THHN/THWN insulation, in raceway.
4. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
5. Exterior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
6. Underground Installations: Use only building wire, Type THHN/THWN insulation, in raceway.

D. INSTALLATION

1. Install products in accordance with manufacturers instructions.
2. Use solid or stranded conductor for feeders and branch circuits 10 AWG and smaller.
3. Use stranded conductors for control circuits.
4. Use conductor not smaller than 12 AWG for power and lighting circuits.
5. Use conductor not smaller than 14 AWG for control circuits.
6. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
7. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.
8. Pull all conductors into raceway at same time.
9. Use suitable wire pulling lubricant for building wire.
10. Protect exposed cable from damage.
11. Support cables above accessible ceiling, using metal cable ties to support cables from structure. Do not rest cable on ceiling panels.
12. Use suitable cable fittings and connectors.
13. Neatly train and lace wiring inside boxes, equipment, and panelboards.
14. Clean conductor surfaces before installing lugs and connectors.
15. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
16. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
17. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
18. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.

E. INTERFACE WITH OTHER PRODUCTS

1. Identify wire and cable under provisions of Section 16195.
2. Identify each conductor with its circuit number or other designation as required.

F. FIELD QUALITY CONTROL

1. Perform field inspection and testing under provisions of Division 1.
2. Inspect wire and cable for physical damage and proper connection.
3. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
4. Verify continuity of each branch circuit conductor.
5. Verify continuity of connections.

END OF SECTION 16123

SECTION 16130 - BOXES

PART I - GENERAL

- A. SECTION INCLUDES
 - 1. Wall and ceiling outlet boxes.
 - 2. Pull and junction boxes.
- B. PROJECT CONDITIONS
 - 1. Verify exact measurements in field.
 - 2. Verify locations of boxes and outlets prior to rough-in.
 - 3. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Install at location required for box to serve intended purpose. Boxes may be relocated 10 feet in any direction prior to rough-in at no extra cost.

PART II - PRODUCTS

- A. OUTLET BOXES
 - 1. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, galvanized steel.
 - a. Luminary and Equipment Supporting Boxes: Rated for weight of equipment supported; include 1/2 inch male fixture studs where required. Provide blocking and additional supports and hardware as necessary for ceiling chandeliers, paddle fans, etc.
 - 2. Manufacturer: Raco, Steel City or Appleton.
- B. PULL AND JUNCTION BOXES
 - 1. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
 - 2. Manufacturer: Raco, Steel City or Appleton.

PART III - EXECUTION

- A. INSTALLATION
 - 1. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
 - 2. Install electrical boxes to maintain headroom and to present neat mechanical appearance.
 - 3. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
 - 4. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminary.
 - 5. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods under the provisions of Division 7.
 - 6. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices with each other.
 - 7. Use flush mounting outlet boxes in finished areas.
 - 8. Do not install flush mounting boxes back-to-back in walls; provide minimum 6 inch separation.
 - 9. Provide minimum 24 inches separation in acoustic rated walls.
 - 10. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
 - 11. Use stamped steel bridges to fasten flush mounting outlet box between studs with Caddy 766 far side box supports.
 - 12. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

13. Use adjustable steel channel fasteners for hung ceiling outlet box.
14. Do not fasten boxes to ceiling support wires.
15. Support boxes independently of conduit.
16. Use gang box where more than one device is mounted together. Do not use sectional box.
17. Use 4" square box with plaster ring for single device outlets.
18. Use FS or FD type cast outlet box in exposed locations exposed to the weather and wet locations.

B. INTERFACE WITH OTHER PRODUCTS

1. Coordinate locations and sizes of required access doors with Division 8.
2. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
3. Coordinate mounting heights and locations of outlets mounted above counters, benches and back- splashes.
4. Position outlet boxes to locate luminaires as shown on reflected ceiling plan.

C. ADJUSTING

1. Adjust flush-mounting outlets to make front flush with finished wall material.
2. Install knockout closures in unused box openings.

END OF SECTION 16130

SECTION 16140 - WIRING DEVICES

PART I - GENERAL

A. SCOPE

1. Furnish and install switches, outlets and coverplates.
2. Special heavy duty outlets are indicated on the Drawings. Provide receptacle ampacity and electrode configuration to accommodate equipment to be served.

PART II - PRODUCTS

A. WIRING DEVICES

1. Provide wiring devices as indicated on the Drawing.
2. Toggle switches shall be ivory colored, 15 amp minimum, 20 amp where required by load or building codes.
3. Duplex receptacles shall be ivory colored, NEMA 5-15R minimum, larger as required by load or building codes.
4. Provide ground fault interrupter receptacles as indicated on the Drawings and as required by the building codes.

B. COVERPLATES

1. Provide smooth-faced, ivory-colored, plastic coverplates on all wiring devices.
2. Provide weatherproof wiring devices with U.L. listed weatherproof coverplates, cast metal or non-metallic.

PART III - EXECUTION

A. GENERAL INSTALLTION

1. Boxes and devices shall be mounted vertically and securely fastened. Mount switches in multi-gang boxes wherever several devices are grouped together.
2. Boxes and devices located in a brick veneer wall shall be mounted horizontally in the brick course.

END OF SECTION 16140

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SECTION 16170 - GROUNDING AND BONDING

PART I - GENERAL

- A. SECTION INCLUDES
 - 1. Grounding electrodes and conductors.
 - 2. Equipment grounding conductors.
 - 3. Bonding.

- B. RELATED SECTIONS
 - 1. Section 02781 - Site Grounding.
 - 2. Section 03200 - Concrete Reinforcement.
 - 3. Section 03300 - Cast-In-Place Concrete.

- C. REFERENCES
 - 1. ANSI/NFPA 70 - National Electrical Code.
 - 2. NFPA 99 - Health Care Facilities.

- D. GROUNDING ELECTRODE SYSTEM
 - 1. Metal underground water pipe.
 - 2. Metal frame of the building.
 - 3. Concrete-encased electrode.
 - 4. Ground ring specified in Section 02781.
 - 5. Metal underground gas piping system.
 - 6. Rod electrode.
 - 7. Plate electrode.
 - 8. Active electrode.

- E. PERFORMANCE REQUIREMENTS
 - 1. Grounding System Resistance: 3 ohms.

- F. SUBMITTALS
 - 1. Submit under provisions of Division 1.
 - 2. Product Data: Provide data for grounding electrodes and connections.
 - 3. Test Reports: Indicate overall resistance to ground.
 - 4. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation and installation of exothermic connectors.

- G. PROJECT RECORD DOCUMENTS
 - 1. Submit under provisions of Division 1.
 - 2. Accurately record actual locations of grounding electrodes.

- H. QUALIFICATIONS
 - 1. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum five years documented experience.

- I. REGULATORY REQUIREMENTS
 - 1. Conform to requirements of ANSI/NFPA 70.
 - 2. Furnish products listed and classified by Underwriters Laboratories, Inc. or testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

PART II - PRODUCTS

- A. ROD ELECTRODE
 - 1. Manufacturers:
 - a. Heary Brothers.
 - b. Harger.
 - c. Independent Protection.
 - d. Substitutions: Under provisions of Division 1.
 - 2. Material: Copper.
 - 3. Diameter: 1/2 inch.
 - 4. Length: 10 feet.

- B. ACTIVE ELECTRODES
 - 1. Manufacturers:
 - a. Heary Brothers.
 - b. Harger.
 - c. Independent Protection.
 - d. Substitutions: Under provisions of Division 1.

- C. MECHANICAL CONNECTORS
 - 1. Manufacturers:
 - a. Heary Brothers.
 - b. Harger.
 - c. Independent Protection.
 - d. Substitutions: Under provisions of Division 1.

- D. EXOTHERMIC CONNECTIONS
 - 1. Manufacturers:
 - a. Heary Brothers.
 - b. Harger.
 - c. Independent Protection.
 - d. Substitutions: Under provisions of Division 1.

- E. WIRE
 - 1. Material: Stranded copper.
 - 2. Foundation Electrodes: 2/0 AWG.
 - 3. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

PART III - EXECUTION

- A. EXAMINATION
 - 1. Verify that final backfill and compaction has been completed before driving rod electrodes.

- B. INSTALLATION
 - 1. Install Products in accordance with manufacturer's instructions.
 - 2. Install rod electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground.
 - 3. Provide grounding well pipe with cover at each rod location. Install well pipe top flush with finished grade.
 - 4. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing. Bond steel together.
 - 5. Provide bonding to meet Regulatory Requirements.

6. Bond together metal siding not attached to grounded structure; bond to ground.
7. Bond together reinforcing steel and metal accessories in fountain structures.
8. Install transient suppression plate as required.
9. Install ground grid under access floors. Construct grid of 2 AWG bare copper wire installed on 24 inch centers both ways. Bond each access floor pedestal to grid.
10. Bond together each metallic raceway, pipe, duct and other metal object entering space under access floors. Bond to underfloor ground grid. Use 2 AWG bare copper conductor.
11. Provide isolated grounding conductor for circuits supplying electronic cash registers, computer room equipment.
12. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

C. INTERFACE WITH OTHER PRODUCTS

1. Interface with site grounding system installed under Division 1, Section 02781.
2. Interface with lightning protection system installed under Section 16670.

D. FIELD QUALITY CONTROL

1. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
2. Use suitable test instrument to measure resistance to ground of system. Perform testing in accordance with test instrument manufacturer's recommendations using the fall-of-potential method.

END OF SECTION 16170

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SECTION 16195 - ELECTRICAL IDENTIFICATION

PART I - GENERAL

- A. **WORK INCLUDED**
 - 1. Nameplates.

PART II - PRODUCTS

- A. **MATERIALS**
 - 1. Nameplates: Engraved three-layer laminated plastic, black letters on a white background.

PART III - EXECUTION

- A. **INSTALLATION**
 - 1. Degrease and clean surfaces to receive nameplates.
 - 2. Install nameplates parallel to equipment lines.
 - 3. Secure nameplates to equipment fronts using screws, rivets, or adhesive. Secure nameplate to inside face of recessed panelboard doors in finished locations.
 - 4. Embossed tape will not be permitted for any application.
- B. **NAMEPLATE ENGRAVING SCHEDULE**
 - 1. Provide nameplates to identify all electrical distribution and control equipment, and loads served. Letter Height: 1/8 inch for individual switches and loads served, 1/4 inch for distribution and control equipment identification.
 - 2. Provide nameplates of minimum letter height as scheduled following.
 - 3. Switchboard and panelboards: 1/4 inch: identify equipment designation. 1/8 inch: identify voltage rating.
 - 4. Individual Circuit Breakers, Enclosed Switches, Motor Starters or Switches in Switchboards: 1/8 inch: identify circuit and load served.

END OF SECTION 16195

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SECTION 16321 - EQUIPMENT ROUGH-IN AND HOOK-UP

PART I - GENERAL

- A. SCOPE
 - 1. Provide rough-in, disconnect switches and final connections for all items of equipment requiring electrical power.
 - 2. Equipment to be furnished and set in place by Owner or other Contractors.

- B. COORDINATION
 - 1. Contractor must closely coordinate with the equipment supplier regarding H.P., F.L.A., outlet mounting heights, connection cord plug-receptacle electrode configurations and other special wiring requirements.

- C. REFERENCE
 - 1. Refer to drawings for wiring, conduit, breaker and other information regarding equipment wiring.

END OF SECTION 16321

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SECTION 16338 - CONTACTORS

PART I - GENERAL

- A. **SCOPE**
 - 1. Furnish and install lighting and fractional horsepower motor contactors and associated controls, wiring, and conduit.

- B. **RATINGS AND IMPEACHED**
 - 1. Switch contact current and voltage are indicated on drawings.
 - 2. Coil control voltage to be 120 volts. Provide control transformer primary and secondary fuse protection. Fuse type to be KTK-R.

- C. **MANUFACTURER**
 - 1. Product shall be Square d or Architect Approved Equal. Any substitutions accepted with Architect's approval to match Square D shall be part of this contract.

PART II - PRODUCTS

- A. **CONTACTORS**
 - 1. UL listed, electrically-operated, mechanically held, or electrically held, as indicated on drawings, with heavy duty plated contracts. IEC or European style contactors shall not be acceptable. Provide wiring devices as indicated on the drawing.

PART III - EXECUTION

- A. **GENERAL INSTALLATION**
- B. Install contactors on panels or in NEMA 1 enclosures as noted on drawings. Mount control stations and install control wiring and conduit and all power wiring to contact terminal blocks and terminal strips.

END OF SECTION 16338

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SECTION 16440 - DISCONNECT SWITCHES

PART I - GENERAL

- A. WORK INCLUDED
 - 1. Disconnect switches.
 - 2. Fuses.
 - 3. Enclosures.

- B. REFERENCES
 - 1. ANSI/UL 198C - High-Intensity Capacity Fuses; Current Limiting Types.
 - 2. ANSI/UL 198E - Class R Fuses.
 - 3. FS W-F-870 - Fuseholders (For Plug and Enclosed Cartridge Fuses).
 - 4. FS W-S-865 - Switch, Box, (Enclosed), Surface-Mounted.
 - 5. NEMA KS 1 - Enclosed Switches.

- C. SUBMITTALS
 - 1. Submit product data under provisions of Division 1.
 - 2. Include outline drawings with dimensions, and equipment ratings for voltage, capacity, horsepower, and short circuit.

PART II - PRODUCTS

- A. ACCEPTABLE MANUFACTURERS - DISCONNECT SWITCHES
 - 1. Square D.
 - 2. Cutler-Hammer.
 - 3. Siemens.
 - 4. Architect Approved Equal

- B. DISCONNECT SWITCHES
 - 1. Fusible Switch Assemblies: NEMA KS 1; quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. Fuse Clips: Designed to accommodate Class R fuses.
 - 2. Non-Fusible Switch Assemblies: NEMA KS 1; Type HD; quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position.
 - 3. Enclosures: NEMA KS 1; Type 1 as indicated on Drawings.

- C. ACCEPTABLE MANUFACTURERS - FUSES
 - 1. Bussmann.
 - 2. Gould Shawmut.
 - 3. Architect Approved Equal

- D. FUSES
 - 1. Fuses 600 Amperes and Less: ANSI/UL 198E, Class RK1; current limiting, time delay, one-time fuse.
 - 2. Interrupting Rating: 200,000 rms amperes.

PART III - EXECUTION

A. INSTALLATION

1. Install disconnect switches where indicated on Drawings.
2. Install fuses in fusible disconnect switches.

END OF SECTION 16440

SECTION 16440 - PANELBOARDS

PART I - GENERAL

A. SCOPE

1. Furnish and install circuit breaker type panelboards as shown on the Drawings and specified herein.

PART II - PRODUCTS

A. PANELBOARDS

1. All panelboards shall be listed under UL 67 and shall have appropriate labeling.
2. Panelboards for use on 208/120 volt system shall have a minimum integrated equipment short circuit current rating of 10,000 amps RMS symmetrical or sized as indicated on the Drawings.
3. Box shall be fabricated of galvanized steel, gauge per NEMA and UL standards. Knock-out provisions and wiring gutters shall also be in accordance with NEC requirements. Nominal width to be 20" (NQOD-type) or 14" (QO-type). Nominal depth to be 5-3/4" (NOD-type) or 3-3/4" (QO-type).
4. Each panelboard shall have a full capacity neutral subassembly.
5. Each panelboard shall include a ground bus subassembly, similar in construction to the neutral subassembly, factory mounted and bonded to the box. Subassembly shall have adequate terminals for branch circuit equipment ground conductors indicated on the Drawings.
6. Main circuit breakers shall be individually mounted and bolted to the branch bussing assembly. Branch mounted, back-fed main circuit breakers shall not be used.
7. Interior labeling shall include a connection diagram and labels indicating proper torque and wire types for main input connections and both line and load side circuit breaker connections.
8. Circuit breakers shall be quick-make, quick-break, thermal magnetic trip (enclosure compensated), molded case type, UL-listed. Circuit breakers used as the only over current device for HVAC heating, air conditioning or refrigeration equipment shall carry the UL "HACAR" marking. Breaker ratings shall be per drawings or as specified herein.
9. For circuits designated on the Drawings, furnish circuit breakers incorporating UL Class A ground fault protection. Protective system shall be an integral part of circuit breaker which also provides overload and short-circuit protection for the branch circuit. Single pole breakers with integral ground fault system shall require no more space than a conventional circuit breaker.
10. Branch circuit breakers 1 and 2 shall be numbered and connected to Phase A, 3 and 4 are Phase B, and 5 and 6 are Phase C, etc.
11. Terminals for connection of the feeder to the panelboard mains or main breaker shall be UL recognized as suitable for the type of conductors specified.
12. The equipment shall have adequate quantity of lugs to terminate the quantity and size of conductors as shown on the Drawings. Lugs shall be suitable for type of conductors to be used as shown on the Drawings and/or as specified elsewhere in these Specifications.
13. Manufacturer:
 - a. Square D type NQOD or QO, as indicated on Drawings.
 - b. GE
 - c. Siemens
 - d. Or Architect Approved Equal.

PART III - EXECUTION

A. INSTALLATION

1. Each panelboard shall be installed with top at 6'-0" above floor, flush or surface mounted or as designation the Drawings. Verify recessed panel depth is compatible with wall thickness and construction.

END OF SECTION 16440

SECTION 16450 - SECONDARY GROUNDING

PART I - GENERAL

A. WORK INCLUDED

1. Power system grounding.
2. Electrical equipment and raceway grounding and bonding.

B. SYSTEM DESCRIPTION

1. Ground the electrical service system neutral at service entrance equipment to line side of metallic water service and to supplementary building grounding electrodes.
2. Ground each separately-derived system neutral to nearest effectively grounded building structural steel member.
3. Provide communications system grounding conductor at point of service entrance and connect to separate grounding electrode.
4. Bond together system neutrals, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, receptacle ground connectors, and plumbing systems.

C. SUBMITTALS

1. Submit shop drawings under provisions of Division 1.
2. Indicate layout of ground ring, location of system grounding electrode connections, and routing of grounding electrode conductor.

PART II - PRODUCTS

A. MATERIALS

1. Ground Rods: Copper-encased steel, 3/4 inch diameter, minimum length 10 feet.

PART III - EXECUTION

A. INSTALLATION

1. Provide a separate, green, insulated equipment grounding conductor in feeder and branch circuits. Terminate each end on a grounding lug, bus, or bushing.
2. Connect grounding electrode conductors to metal water pipe using a suitable ground clamp. Make connections to flanged piping at street side of flange. Provide bonding jumper around water meter.
3. Supplementary Grounding Electrode: Use driven ground rod in suitable exterior recessed well, fill with gravel after connection is made.
4. Use minimum 6 AWG copper conductor for communications service grounding conductor. Leave 10 feet slack conductor at terminal point.
5. Isolated Grounding Systems: Use insulated equipment grounding conductor and connect only to service grounding electrode.

B. FIELD QUALITY CONTROL

1. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
2. Measure ground resistance from system neutral connection at service entrance to convenient ground reference point using suitable ground testing equipment. Resistance shall be 3 ohms or less.

END OF SECTION 16450

SECTION 16476 – ENCLOSED CIRCUIT BREAKERS

PART I - GENERAL

- A. SECTION INCLUDES: Enclosed molded case circuit breakers.
- B. REFERENCES
 - 1. FS W-C-375 – Circuit Breakers, Molded Case, Branch Circuit and Service.
 - 2. NEMA AB 1 – Molded Case Circuit Breakers
- C. SUBMITTALS
 - 1. Submit product data under provisions of Division 1.
 - 2. Include circuit breaker and current limiter ratings, trip current and let-through current curbs, outlines dimensions, and terminal lug sizes.
- D. REGULATORY REQUIREMENTS
 - 1. Use circuit breakers listed by Underwriters' Laboratories, Inc., and suitable for specific application.

PART II - PRODUCTS

- A. MANUFACTURERS
 - 1. Square D
 - 2. Cutler-Hammer
 - 3. General Electric
 - 4. Siemens
- B. MOLDED CASE CIRCUIT BREAKER
 - 1. Circuit Breaker: NEMA AB 1.
- C. CONFIGURATION
 - 1. Configuration: Instantaneous automatic tripping.
 - 2. Field-Adjustable Trip Circuit Breaker: NEMA AB 1; provide circuit breakers with frame sizes 200 amperes and larger with mechanism for adjusting continuous current pickup current setting for automatic operation. Range of Adjustment: 1 percent.
 - 3. Field-Changeable Ampere Rating Circuit Breakers: NEMA AB 1. Provide circuit breakers with frame sizes 200 amperes and larger with changeable trip units.
 - 4. Current Limiting Circuit Breaker: Provide circuit breaker with automatic-resetting current limiting elements in each pole. Let-through Current and Energy: Less than permitted for same size Class RK-5 fuse.
 - 5. Solid-State Circuit Breaker: Provide circuit breaker with electronic sensing, timing and tripping circuits for adjustable current settings; ground fault trip with instantaneous trip; and adjustable short time trip.
- D. RATINGS
 - 1. Ratings: NEMA AB 1; as scheduled.
- E. TERMINAL LUGS
 - 1. Size: NEMA AB 1; as scheduled.
- F. CURRENT LIMITERS
 - 1. Current Limiter: Designed for application with molded case circuit breaker.
 - 2. Coordinate limiter size with trip rating of circuit breaker to prevent nuisance tripping and to achieve interrupting current rating specified for circuit breaker.

3. Provide interlocks to trip circuit breaker and to prevent closing circuit breaker when limiter compartment cover is removed or when one or more limiter is not in place or has operated.
- G. ENCLOSURE
1. Enclosure: NAME AB 1.
 2. Fabricate enclosure from steel.
 3. Finish using manufacturer's standard enamel finish, gray color.
- H. ACCESSORIES
1. Provide accessories to NEMA AB 1.
 2. Shunt Trip Device: 120 volts, AC.
 3. Undervoltage Trip Device: 120 volts, AC.
 4. Auxiliary Switch: 120 volts, AC.
 5. Alarm Switch: 120 volts, AC.
 6. Electrical Operator: 120 volts, AC.
 7. Handle Lock: Include provisions for padlocking.
 8. Provide mechanical trip device.
 - 9.

PART III - EXECUTION

- A. EXAMINATION
1. Verify that surfaces are ready to receive work.
 2. Verify field measurements as required.
 3. Verify that required utilities are available, in proper location, and ready for use.\
 4. Beginning of installation means installer accepts conditions.
- B. INSTALLATION
1. Install enclosed circuit breakers where shown on Drawings, in accordance with manufacturer's instructions.
- C. ADJUSTING
1. Adjust work under provisions of Division 1.
 2. Adjust trip settings to that circuit breakers coordinate with other overcurrent protective devices in circuit.
 3. Adjust trip settings to provide adequate protection from overcurrent and fault currents.
- D. FIELD QUALITY CONTROL
1. Perform field inspection and testing under provisions of Division 1.
 2. Inspect and test each circuit breaker to NEMA AB 1.
 3. Inspect visually and perform several mechanical ON-OFF operations on each circuit breaker.
 4. Verify circuit continuity on each pole in closed position.
 5. Determine that circuit breaker will trip on overcurrent condition, with tripping time to NEMA AB 1 requirements.
 6. Include description of testing and results in test report.

END OF SECTION 16476

SECTION 16500 - LIGHTING

PART I - GENERAL

- A. SCOPE : General Contractor will furnish and install lighting fixtures as shown on the drawings and/or the Lighting Fixture Schedule.
- B. QUALITY ASSURANCE
 - 1. All luminaires are to be listed and labeled by Underwriter's Laboratories.

PART II - PRODUCTS

- A. LAMPS
 - 1. Products shall be Osram Sylvania.
 - 2. Also accepted with Architect's approval: General Electric or Phillips
 - 3. Or Architect Approved Equal
- B. LIGHTING FIXTURES
 - 1. Fixture manufacturer and catalog number are designated on the Drawings in the lighting fixture schedule.
 - 2. Each luminaire is identified by a letter prefix which designates how it is to be mounted as noted in the lighting fixture schedule.
 - 3. Fixtures are to be LED and include all required mounting accessories required for a complete fixture installation.
 - 4. All exposed parts (trim rings, pull-down cylinders, etc.) of the luminaires are to be finished by the manufacturer or Electrical Contractor in a color to be selected by the project architect.
 - 5. Or Architect Approved Equal.
- C. STANDARD BALLASTS
 - 1. Products shall be Advance.
 - 2. Also accepted with Architect's approval: Valmont or Magnetek.
 - 3. Or Architect Approved Equal
 - 4. When available from the lighting fixture manufacturer, all ballasts shall be 0.8 power factor or higher. Furnish special low temperature wherever required
 - 5. Wherever required, HID ballasts are to be reactor or CWA HPF type.
 - 6. All ballasts are to be certified by CMB & ETL.

PART III - EXECUTION

- A. GENERAL INSTALLATION
 - 1. Use steel wire hangers attached to the fixture and fastened to the building structure to independently support recessed fixtures at diagonal corners (two corners suspended). Fixtures are to fit tight against construction to eliminate light leaks. Recessed down lights are to be provided with adjustable mounting bars/frames for drywall or lay-in ceilings as required.
 - 2. Wall-mounted fixtures shall be mounted plump with building lines and installed with proper box and cover hardware.
 - 3. Surface-mounted fixtures are to cover mounting hardware. Use a canopy that is no longer than the length and width of the fixture and at a height that is no higher than required to mount the fixture absolutely vertical. Canopy finish is to match the fixture finish.
 - 4. The Electrical contractor is solely responsible for ordering lighting fixtures to allow a reasonable delivery time from the manufacturer. (the contractor will be considered

responsible for all penalties incurred due to delays caused by his lac of action to order fixtures on time.) Substitutions from manufacturers not listed in the specification will not be considered for approval when the specified fixtures are not ordered reasonably on time.

5. Install lamps in all fixtures. All lamps shall be new and unused prior to installation. All lamps shall be in working order at the time of final acceptance of the work.
6. At completion of installation and before turning over to owner, clean and remove all dirt and smudges from all lighting fixtures including lenses, louvers and reflectors.
7. Refer to lighting fixture schedule on the Drawing for type of ballast and type of lamp to be installed in lighting fixtures.

END OF SECTION 16500

SECTION 16902 - ELECTRIC CONTROLS AND RELAYS

PART I - GENERAL

- A. SECTION INCLUDES
 - 1. Pushbutton and selector switches.
 - 2. Control stations.
 - 3. Relays.
 - 4. Time delay relays.
 - 5. Control power transformers.
 - 6. Control panels.

- B. PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION
 - 1. Section 15970 - Controls: Installation of pressure, temperature, and flow switches in piping, ductwork, and mechanical equipment.

- C. REFERENCES
 - 1. NEMA ICS 1 - General Standards for Industrial Control Systems.
 - 2. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies.
 - 3. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
 - 4. NEMA ST 1 - Standard for Specialty Transformers (Except General Purpose Type).

- D. SUBMITTALS
 - 1. Submit shop drawings under provisions of Division 1.
 - 2. Submit shop drawings to NEMA ICS 1 indicating control panel layouts, wiring connections and diagrams, dimensions, support points.
 - 3. Submit product data under provisions of Division 1.
 - 4. Submit product data for each component specified.
 - 5. Submit manufacturer's installation instructions under provisions of Division 1.

- E. PROJECT RECORD DOCUMENTS
 - 1. Submit record documents under provisions of Division 1.
 - 2. Accurately record actual locations of control equipment. Revise diagrams included in Drawings to reflect actual control device connections.

- F. OPERATION AND MAINTENANCE DATA
 - 1. Submit operation data under provisions of Division 1.
 - 2. Include instructions for adjusting and resetting time delay relays, timers, and counters.
 - 3. Submit maintenance data under provisions of Division 1.
 - 4. Include recommended preventive maintenance procedures and materials.

- G. QUALIFICATIONS
 - 1. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum five years experience.

PART II - PRODUCTS

- A. MANUFACTURERS
 - 1. Allen Bradley.
 - 2. General Electric.
 - 3. Square D.
 - 4. Substitutions: Under provisions of Division 1.

- B. CONTROL SWITCHES AND STATIONS
 1. Contacts: NEMA ICS 2; Form C.
 2. Contact Ratings: NEMA ICS 2; A150.
 3. Selector Switches Operators: NEMA ICS 2; Three position rotary selector switch.
 4. Pushbutton Operator: NEMA ICS 2; Recessed, Shrouded Lockable type.
 5. Control Stations: NEMA ICS 2; Heavy duty oiltight type pushbutton station.
 6. Limit Switches: Positive opening contacts, oiltight, double insulated enclosure for plunger, roller, wobble or whisker actuators.

- C. CONTROL RELAYS
 1. Contacts: NEMA ICS 2; Form C.
 2. Contact Ratings: NEMA ICS 2; Class A150.
 3. Coil Voltage: 120 volts, 60 Hz., AC.
 4. Magnetic Control Relays: NEMA ICS 2; Class A300.

- D. TIME CLOCKS
 1. Contacts: NEMA ICS 2; Form C.
 2. Contact Ratings: NEMA ICS 2; Class A150.
 3. Coil Voltage: 120 volts, 60 Hz., AC.
 4. Clock Timer: NEMA ICS 2; Class A300, 24 hour 7 day timer with astronomical dial, springwound carry-over.

- E. CONTROL POWER TRANSFORMERS
 1. Transformer: NEMA ST 1; machine tool transformer with isolated secondary winding.
 2. Power Rating: 50 VA.
 3. Voltage Rating: 120 volts primary; 24 volts secondary.

- F. ENCLOSURES
 1. Control Station Enclosure: NEMA ICS 6; Type 1.
 2. Relay Enclosure: NEMA ICS 6; Type 1.

- G. FABRICATION
 1. Control Panels: Shop fabricate control panels to NEMA ICS 1, using cabinets and terminal blocks furnished under the provisions of Section 16160.

PART III - EXECUTION

- A. INSTALLATION
 1. Install devices and equipment in accordance with manufacturer's instructions.
 2. Install individual relays and time delay relays in enclosures.
 3. Install cabinets under the provisions of Section 16160.
 4. Make electrical wiring interconnections as shown on Drawings.

END OF SECTION 16902