



BID BOOK

For

TOWNER'S WOODS PARK BRADY SWITCH TOWER REPAIRS

2264 Ravenna Road, Kent, OH, Portage County, Ohio

Portage Park District
705 Oakwood St.
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May 30, 2023

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EXECUTIVE DIRECTOR

Peninsula Architects: Matthew Schwarz
1775 Main St. Peninsula, OH 44264

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**LEGAL NOTICE
PORTAGE PARK DISTRICT
TOWNER'S WOODS PARK BRADY TOWER REPAIRS**

NOTICE TO BIDDERS

The Portage Park District will receive sealed bids for the above-mentioned project at the Portage Park District Operations Center, 8505 Nicodemus Road, Ravenna, OH 44266 (Shalersville Township), until **11:00 AM** Local Time on **Monday June 26th**, at which time the bids will be publicly opened and read aloud.

Consulting architect: Peninsula Architects, 1775 Main St., Peninsula, OH; mschwarz@pa-architects.com

Bid instructions, Drawings, Project Manual, and Specifications will be available online at <https://www.co.portage.oh.us/portage-county-park-district/news-publications/pages/public-notice> Contractors can register for free on the website and download drawings. Registering on the website will ensure that Contractors receive any addenda in a timely fashion. No paper copies of the drawings will be distributed by Portage Park District or Peninsula Architects.

The work to be performed as part of this Contract: Improvements to two-story concrete building, including concrete repairs and replacement of exterior stairs. The architect's estimate of probable cost, including contingencies, is \$101,400.00.

Each bidder shall be required to complete and file with his/her bid a Proposal Guaranty and Performance/Payment Bond Form (Section 153.571 of the Ohio Revised Code) with a Surety Company executing the Bond, which is listed on the Treasury Department's most current list (Circular 570 as amended) and authorized to transact business in the State where the project is based.

If the bid is accepted, the successful bidder shall enter into a contract and the Proposal Guaranty and Performance/Payment Bond shall provide the conditions in said bond, and as listed below:

(A) A Contract Performance Bond in an amount equal to 100% of the estimated cost of the work conditioned, among other things that the Contractor will perform the work upon the terms proposed, within the time prescribed, in accordance with the plans and specifications.

(B) A Payment Bond in an amount equal to 100% of the estimated cost of the work conditioned for the payment by the Contractor and all Sub-contractors for labor performed and materials furnished in connection with the project involved.

The Portage Park District reserves the right to reject any or all bids and waive any informalities in bidding. Bids of Corporations not chartered in Ohio must be accompanied by proper certification that such corporation is authorized to do business in Ohio.

All bidders must fill in all blanks of the proposal in ink or typewritten.

This Contract is subject to the provisions of Executive Order 11246 of September 24, 1965, as pertains to an Affirmative Action Plan, and Governor Executive Order of January 27, 1972. The successful low bidder will be required to comply with all Contract Requirements for Equal Employment Opportunities. Each bidder must ensure that all employees and applicants for employment are not discriminated against because of race, color, religion, sex or national origin.

For the convenience of each prospective bidder, a non-mandatory pre-bid site visit has been scheduled on Monday June 12, 10:00 at Towner's Woods Park, Ravenna Road, Franklin Township. Due to a bridge closure on Ravenna Road, access to Towner's Woods is from the west only.

PORTAGE PARK DISTRICT, CHRISTINE CRAYCROFT, EXECUTIVE DIRECTOR

INFORMATION TO BIDDERS

1. Project Description:

The work performed under this contract will be limited to concrete structural repairs and the replacement of the exterior stair. Concrete structural repairs are indicated and detailed on sheets S0.01, S1.00, S2.00, S2.01, S2.02, and S2.03. These repairs do not include wood framing repairs but do include selective demolition, replacement, and repair of concrete as indicated.

Stair replacement information is included in structural and architectural sheets S1.00, S1.01, S2.02, A1.01, A1.02, and A2.01. This portion of the work includes demolition of the existing stair, supports, and railing. It also includes repairs to the concrete as well providing and installing the steel stair, supports, and railing. Stamped engineering drawings for the stair will be provided by the Contractor as a delegated design element that will be submitted to the Permitting Authority as well as the Structural Engineer and Architect for approval prior to fabrication and installation.

Additional information is included in the technical specifications.

2. Receipt and Opening of Bids:

The Portage Park District invites bids on the form attached hereto. All blanks must be appropriately filled in. **Bids will be received at the Portage Park District Operations Center, 8505 Nicodemus Road, Shalersville, until Monday, June 26, 11:00 a.m. EST (time determined from Park District mobile phone), and then shall be publicly opened and read aloud immediately thereafter.** The envelopes containing the bids must be sealed, addressed, and designated as bid for **“Brady Switch Tower Structural Repairs.”** **The Portage Park District may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids.** Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. **No bidder may withdraw a bid within sixty (60) days after the actual date of the opening thereof.**

3. Preparation of Bid:

Each bid must be submitted on the prescribed form and accompanied by a bid security as described in paragraph 5. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures, and the foregoing certifications must be fully completed and executed when submitted. In case of discrepancies of written words and figures, the prices written in words shall govern.

Each bid must be submitted in duplicate in a sealed envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form.

The Engineer’s Estimate of Probable Cost is: \$101,400.00

4. Method of Bidding:

The Owner invites unit price/lump sum price bids as indicated in the Bid form. If the lowest total responsive bid received exceeds the amount of funds available to finance the contract, the Owner may:

- a. Reject all bids;
- b. Augment the funds available in an amount sufficient to enable award to the lowest responsive bidder or bidders;
- c. Take the base bid less a number of items as listed on the proposal form as to produce a net amount which is within available funds.

5. Qualifications of Bidder:

All bidders shall have experience in all functions of the work described in the plans for this project.

6. Bid Security:

Each bid shall be accompanied by either a Bid Guaranty Bond in the amount of 100% of the Bid amount or by a certified check, cashier's check, or letter of credit on a solvent bank in the amount of not less than 10% of the amount of the Bid, subject to conditions provided in the Instructions to Bidders. The successful BIDDER will be required to furnish a satisfactory Performance Bond in the amount of 100% of the Bid in accordance with Section 153.54 of the Ohio Revised Code.

Such cash, checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within sixty (60) days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he/she has not been notified of the acceptance of his/her bid. Attorneys-in-fact who sign bid bonds must file with each bond a certified and effectively dated copy of their power of attorney.

Bid security furnished in bond form shall be issued by a Surety Company or Corporation licensed in the State of Ohio to provide said surety.

7. Liquidated Damages for Failure to Enter into Contract:

The successful bidder, upon his/her failure or refusal to execute and deliver the contract and bonds required within ten (10) days after he/she has received notice of the acceptance of his/her bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his/her bid.

8. Conditions of Work:

Each bidder must inform himself/herself fully to the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his/her obligation to furnish all material and labor necessary to carry out the provisions of his/her contract. Insofar as possible the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

9. **Obligation of Bidder:**

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents. This includes any and all addenda. The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his/her bid.

10. **Examination of Site:**

Each bidder shall and is hereby directed to inspect the entire site of the proposed work and judge for himself/herself as to all the circumstances affecting the cost and progress of the work and shall assume all patent and latent risks in connection therewith. For the benefit of each prospective bidder, **an Optional Pre-bid Conference has been scheduled for Monday, June 12 at 10:00 a.m. at Towner's Woods Park, 2264 Ravenna Road, Kent, Ohio.**

11. **Working Facilities:**

The plans show, in the general and detailed manner, the existing structures and the land available for construction purposes. The bidders must satisfy themselves of the conditions and difficulties that may be encountered in the execution of the work at this site.

12. **Addenda and Interpretations:**

No official interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.

Every request for such interpretation should be in writing addressed to **Matt Schwartz via email and contain BRADY SWITCH TOWER REPAIRS– RFI in the address**; Email: mschwarz@pa-architects.com and to be given consideration, **must be received by Friday, June 16th, noon.** Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be posted on the Portage Parks website, **not later than June 20th at 4:00 p.m.** Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

13. **Water Supply:**

All water for construction purposes, as well as the expense of having water conveyed about the work, must be provided by the Contractor and the cost of this work shall be included in the unit prices stipulated for the various items of the work to be done under this contract.

The source, quality and quantity of water furnished shall, at all times, be satisfactory to the project engineer.

14. **Signature of Bidders:**

The firm, corporate or individual name of the bidder must be signed in ink in the space provided for the signatures on the proposed blanks. In the case of a corporation, the title of the officer signing must be stated and such officer must be thereunto duly authorized and the seal of said corporation duly affixed. In the case of the partnership, the signature of at least one of the partners must follow the firm name, using the term "member of the firm". In the case of an individual, use the terms "doing business as", or "sole owner". The bidder shall further state in his proposal the name and address of each person or corporation interested therein.

15. **Notice of Special Conditions:**

Attention of the bidder is particularly called to those parts of the General Contract Conditions and other contract documents and specifications which deal with the following:

- a. Insurance requirements
- b. Requirement for a performance bond for 100% of contract price
- c. Requirement that all subcontractors be approved by the owner
- d. Time-for-completion and liquidated damages requirements
- e. Affirmative Action and Equal Opportunity provisions, including Prevailing Wage requirements
- f. Successful bidder shall provide any proof of registration as may be required within Portage County

16. **Additional Obligations Upon Contract Award:**

Upon award of the contract but prior to execution of the final agreement and notice to proceed, the contractor shall submit all of the following documents, completed as required:

- a. Acceptance of Notice of Award
- b. Contract
- c. Insurance certificate(s) and/or policy(ies)/Workers Compensation Certificate
- d. Performance Bond, if not already provided
- e. Contractor Registration for prime and subcontractors, if required

17. **Foreign Corporations and Contractors**

a. Foreign Corporations

Definition: "Foreign Corporation" means a corporation incorporated under the laws of another state. No contract shall be entered into with a foreign corporation until the Secretary of State has certified that such corporation is authorized to do business in Ohio; and until, if the bidder so awarded the contract is a person or partnership, it has filed with the Secretary of State a Power of Attorney designating the Secretary of State as its agent for the purpose of accepting service of summons in any action brought under Section 153.05 of the Ohio Revised Code or under Sections 4123.01 to 4123.94, inclusive of the Revised Code.

18. **Signing Bid — Agreement to Terms of Attached Contract:**

By signing this bid, Contractor acknowledges reading all attached and all referenced documents and

agrees he/she abide by the terms therein, without modification, unless Owner agrees to such modifications in writing. Modifications of any documents attached or referenced herein shall not be made a condition of signing the final contract by the Contractor and failure to sign the contract as worded herein within the time allotted shall subject the Contractor to forfeiture of his/her bid security.

19. Liquidated Damages for Failure to Complete Project by Completion Date

Contractor and Park District recognize that time is of the essence of this Project and that the Park District will suffer financial loss if the work is not completed within the times specified under Completion Date, plus any extensions allowed under the contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the Park District if the Work is not completed on time. Accordingly, instead of requiring such proof, the Park District and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay the Park District two hundred fifty dollars (\$250.00) for each day that expires after the time specified in the Completion Date until the work is substantially completed. After substantial completion, if Contractor shall neglect, refuse or fail to complete the remaining work within the contract time or any proper extension thereof granted by the Park District, Contractor shall pay Park District two hundred fifty dollars (\$250.00) for each day that expires after the time specified in Completion Date for completion and readiness for final payment until the work is completed and ready for final payment.

20. Applicable Laws

The Revised Code of the State of Ohio, insofar as they apply to the laws of competitive bidding, contracts, and purchases, are made a part hereof. The contractor, subcontractors, and any persons on their behalf shall be required to comply with all of the provisions of Chapter 4115: Wages and Hours on Public Works of the Revised Code of the State of Ohio, and all amendments, additions and deletions thereto.

All laws of the United States of America, the State of Ohio, and the Portage Park District applicable to the products or services covered herein, are made a part hereof.

Section 4115.07 of the Ohio Revised Code of the State of Ohio provides that all contractors or subcontractors falling within or affected by Section 4115.03 to 4115.14 inclusive of the Ohio Revised Code, shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not less than the minimum prevailing rates of wages, as set forth in the Contract. Such payroll records shall not be destroyed or removed from the State for a period of one year following the completion of the Contract in connection with which records are made.

At any time during the life of the Contract, the Park District may demand that the contractor and/or his subcontractors submit an affidavit stating that wages have been paid for the pay period or periods in question in conformance with the minimum rates set forth in the contract. Such affidavits must be supported by a certified copy of his/her detailed payroll records for the questioned period or periods. Said detailed payroll records shall show the individuals by name, classification and pay rate on the contractor's payroll each day of the period, together with the hours each day and the total amount paid, plus any deductions which may have been made. The Park District may withhold partial payments pending the submission of the affidavit and certified payroll records. If minimum wage requirements have not been met in accordance with the terms of the contract, payments may be withheld until the contractor and/or subcontractor has complied.

UPON COMPLETION OF THE WORK AND PRIOR TO FINAL PAYMENT, THE CONTRACTOR and SUBCONTRACTORS (IF ANY) SHALL SUBMIT AN AFFIDAVIT (SEE PREVAILING WAGE RESPONSIBILITIES SECTION) STATING THAT WAGES HAVE BEEN PAID IN CONFORMANCE WITH THE MINIMUM RATE SET FORTH IN THE CONTRACT.

The affidavit must be executed and sworn to by the officer or agent of the contractor or subcontractor who supervises the payment of employees, before the Park District will release the Surety and/or make final payment due under the terms of the contract.

21. **Clerical Error**

The Park District reserves the right to correct any award erroneously made as a result of a clerical error on the part of the Portage Park District.

22. **Infringements and Indemnification**

The bidder, if awarded an order or contract, agrees to protect, defend, and save the Park District harmless against any demand for payment for use of any patented material, process, article, or device that may enter into the manufacture, construction, or from a part of the work covered by either order or contract and he further agrees to indemnify and save the Park District harmless from suits or actions or every nature and description brought against it, for or on account of any injuries or damages received or sustained by a party or parties by or from any act of the acts of the contractor, his servants or agents.

To that extent, the bidder or contractor agrees to furnish adequate Public Liability and Property Damage Insurance, the amount of which will be determined by the Park District whenever such insurance is deemed necessary. When so required, the types and amounts of insurance to be provided are set forth in the Invitation to Bid. When the Park District requires a certificate of insurance on the policy, the Park District is to be included as an additional insured.

23. **Workers' Compensation**

Insofar as Worker's Compensation is concerned, the bidder or contractor agrees to furnish an official certificate or receipt of the Industrial Commission of Ohio, showing that he has paid into the State Insurance fund the necessary premiums, whenever such certificates are required in the Advertisement for Bids.

24. **Equal Employment Opportunity Policy**

Any contract which shall be entered into between the Portage Park District and the successful bidder shall contain the following provisions:

In hiring of employees for the performance of work under this contract or any subcontract, no contractor, subcontractor or any person acting on his behalf shall, by reason of race, color, religion, national origin, ancestry, or sex discriminate against any person who is qualified and able to perform the work required by such employment.

The contractor, subcontractor, or any person or corporation acting on his behalf shall not, by reason of

race, color, religion, national origin, ancestry, or sex, in any manner intimidate any employee hired for the performance of work in connection with the manufacture, processing, or furnishing of any such material, supplies, or equipment.

25. Insurance

The Contractor shall not commence work under this Contract until he has obtained all the insurance required hereunder and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

The contractor shall file with the Owner all Certificate(s) of Insurance as are necessary to document the insurance coverage required hereunder, subject to the approval of the Owner and receipt of any additional forms/documentation requested, prior to final execution of the Contract and issuance of the Notice to Proceed.

Requirements for all Insurance Coverages

Notices to Owner and Other Additional Insured

The policy shall provide and the Certificate shall reflect the fact the Owner and all other additional insured shall receive at least 30 days notice of any cancellation or change in the coverage (except for nominal changes) adverse to the interests of the Owner and other additional insured in order for such cancellation or change in coverage to be effective. The Owner and other additional insured shall be provided with any notice or non-renewal, regardless of the cause.

Additional Insured

The insurance required by this Section shall include the interests of the Contractor and its subcontractors, the Engineer and its subconsultants in the work, including each of their respective employees, all of whom shall be listed as insured or as additional insured. The Owner's financing agency shall also be listed as an additional insured, as necessary.

Policy Format

All policies shall be the Insurance Service Office's current form or better.

General Liability

Types of Insurance: The policy should provide at a minimum, the following coverages and the Certificate of Insurance shall so indicate whether the coverage is provided in the basic policy or in supplemental coverage to negate an exclusion in the basic policy:

- Comprehensive Form
- Premises/Operations
- Underground, Explosion and Collapse Hazard (Underground and Collapse Hazard coverage required only for General Construction Contractor and others doing excavation and other earthwork)
- Products/Completed Operations
- Contractual
- Independent Contractor

- Broad Form Property Coverage

Liability Limits: The liability limits for the coverages noted above shall be at least as noted below.

	Liability Limits	
	Each Occurrence	Aggregate
BI & PD Combined (CSL)	\$ 1,000,000	\$ 1,000,000

Automobile Liability

Types of Coverage: The policy shall include at least the following types of coverage:

- Any Auto
- All Owner Autos (Priv. Pass.)
- All Owned Autos (Other than Priv. Pass.)
- Hired Autos
- Non-Owned Autos

Liability Limits: The liability limits for the coverages noted above shall be at least as noted below.

	Liability Limits	
	Each Occurrence	Aggregate
BI & PD Combined	\$ 1,000,000	\$ 1,000,000

Owners Protective Liability Policy: The liability limits for the coverages noted above shall be at least as follows:

	Liability Limits	
	Each Occurrence	Aggregate
BI & PD Combined	\$ 1,000,000	\$ 1,000,000

Builders Risk/Installation Floater

Types of Coverage

The Contractor shall insure for the life of the contract against all loss or damage by fire, flood other than National Flood Insurance (whether in a flood hazard area or not), hurricane, windstorm, hail, lightning, explosion, riot civil commotion, aircraft, smoke, vehicles and other hazards covered by the standard current I.S.O. standard fire and extended coverage insurance endorsement. Coverage shall also be provided for all materials and equipment for which pre-incorporation payment is requested.

Limits of Liability: The limit of liability for the coverage noted above shall be not less than the amount of the Contract.

Contractor's Insurance Agent E/O Certificate

Contractor's insurance agent shall provide the Park District with Agent's Errors and Omissions Certificate in the minimum amount of One Million Dollars (\$ 1,000,000.00)

The Policies as listed above shall contain all the following special provisions:

The Company agrees that thirty (30) days prior to cancellation or reduction of the insurance afforded by this policy with respect to the Contract involved, written notice will be mailed to the Portage Park District.

The maintaining of such insurance as outlined herein shall in no way constitute a waiver of legal liability

for damage to any adjoining buildings or their contents or the work and property of others on the site beyond the limits of insurance thus maintained. The Contractor shall hold the Owner free and harmless from any injury and damage resulting from the negligent or faulty performance of the contract by the Contractor or by his/her Subcontractors.

Each contractor shall hold the Owner harmless from all payments for patents, either as royalty or otherwise, in the use of materials, methods, appliances, etc., that he may be in any way involved in or connected with any part of his work or the work of his Subcontractors.

Upon contract award, the contractor shall furnish one (1) copy of Declaration of Insurance as evidence of coverage.



Brady Switch Tower Repairs

To: All Bidding Contractors
From: Christine Craycroft, Executive Director
Re: Submittal Requirements
Date: May 30th, 2023

To Interested Bidders:

The bid specifications require you to submit the items listed below. The omission of any item called for by the bid document does not relieve you of the responsibility to comply with the requirement. Please review your specifications. This list is for your convenience only. If you do not have the listed items submitted, your bid may not be considered.

Please submit:

- Bidder's Proposal and itemized Bid Form
- Proposed Construction Schedule-provided by bidder
- Delinquent Tax Affidavit
- Certificate in Compliance with Section 3517.13
- Non-Collusion Affidavit
- Income Tax Affidavit
- Certification Against Debarment and Suspension
- Unresolved Finding for Recovery Certification
- Bid Guaranty & Bond
- Statement of Bidder's Qualifications & Affidavit
- Proposed Subcontractors' Breakdown

GENERAL PROVISIONS

GENERAL PROVISIONS

ARTICLE 1 - DEFINITIONS

Whenever the words defined in this article, or pronouns used in their stead, occur in the Contract Documents, they shall have the meanings given herein.

Owner: The Portage Park District or their designated representative or any officer duly authorized to act for said agency.

Architect/ Engineer: The Project Manager/ Architect/ Engineer so designated by the Portage Park District assigned to administer the contract.

Inspector: An authorized representative of the Project Manager/Architect/Engineer assigned to make any and all necessary inspections of the work performed and materials furnished by the Contractor.

Contractor: The party entering into the Contract for the performance of the work required thereby, the legal representative of said party, or the agent appointed to act for said party in performance of the work.

Subcontractor: An individual, firm, or corporation who contracts with the Contractor to perform part or all of the latter's contract.

Surety: The body corporate which is bound with and for the Contractor on the bond furnished in connection with this project, which bond forms a part of the Contract Documents.

Specifications: The definitions, instructions, descriptions, directions, provisions, and requirements contained herein and all written supplements thereof made, or to be made, pertaining to the Contract and the materials and workmanship to be furnished under the Contract.

Contract: All things contained in the specifications, drawings, proposal, agreement, and bond; also, all supplemental agreements which could reasonably be required to complete the construction contemplated. The above items shall be considered as one instrument forming the Contract. It is understood that all things contained or referred to in the Advertisement, Information to Bidders, Special Provisions, General Provisions, Detailed Specifications, Signed Contract, Contract Bond, and Drawings, as well as all other papers or addenda attached to or bound with any of the above or referred to therein, are part of the Contract and are to be considered as one instrument constituting the Contract Documents. The intent is to make the various "Parts" and "Sections" of the Contract Documents complementary one to the other. No papers attached to or bound with any of the above shall be detached thereto, as all are a necessary part thereof. Whenever in the Specifications or in the Drawings the words directed, permitted, ordered, designated, prescribed or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation or prescription of the Engineer is intended.

ARTICLE 2 - CONTRACT AND CONTRACT DOCUMENTS

All applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

The specifications and addenda, shall form part of this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light on the interpretation of the provisions to which they refer.

ARTICLE 3 - PERFORMANCE BOND

Simultaneously with his/her delivery of the executed contract, the Contractor shall furnish a surety bond as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner. The bond shall be for 100 percent of the contract price. A Performance Bond meeting the requirements of O.R.C. 153.54 is required. Attorneys-in-Fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

ARTICLE 4 - ANTIDISCRIMINATION

In connection with the performance of work under this Contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, or sex. The Contractor shall post in conspicuous places, available for employees or applicants for employment, notices to be provided by the Owner setting forth the provisions of this non-discrimination clause and the Contractor shall insert the foregoing provisions in all contracts hereunder, except Subcontracts for standard commercial supplies or raw materials.

ARTICLE 5 - AUTHORITY OF PROJECT MANAGER/ARCHITECT/ENGINEER

The Architect/Engineer shall give all orders and directions contemplated under this Contract; shall determine in all cases the amount, quality, acceptability, and fitness of the several kinds of work and materials for which payment is to be made; shall determine all questions respecting the true interpretation or meaning of the Drawings or Specifications relating to said work and the construction thereof; shall decide in all cases every question which may arise relative to the fulfillment of this Contract on the part of the Contractor. In case any dispute shall arise between the parties hereto involving this Contract, seeking determinations and decisions of the Project Manager/Architect/Engineer shall be a condition precedent to the right of the Contractor to receive any money under this Contract.

ARTICLE 6 - AUTHORITY AND DUTIES OF INSPECTORS

Inspectors employed under the supervision of the Project Manager/Architect/Engineer shall be authorized to inspect all work done and materials furnished. Inspection may extend to any part of the work and of the preparation or manufacture of the materials to be used. Inspectors will be assigned to the various phases of the work, reporting to the Project Manager/Architect/Engineer as to the progress of the work and the manner in which it is being performed; also reporting whenever it appears that the materials furnished and work done by the Contractor fail to fulfill the requirements of the Specifications and Drawings, and to call to the attention of the Contractor any failure or other default; but, no inspection, nor any failure to inspect at any time or place, shall relieve the Contractor from any obligation to perform all the work strictly in accordance with the requirements of the Specifications. In case of any dispute arising between the Contractor and the inspector as to materials furnished or the manner of performing the work, the inspector shall have the authority to reject materials or suspend work until the question at issue can be referred to and decided by the Project Manager/Architect/Engineer. The inspectors shall perform such other duties as are assigned to them. They shall not be authorized to revoke, alter, enlarge, relax, or replace any requirements of these Specifications, nor to approve or accept any portion of the work, nor to issue instructions contrary to the Drawings and Specifications. Inspectors shall in no case act as foremen or perform other duties for the Contractor, nor interfere with the management of the work. Any instructions which the inspectors may give the Contractor shall in no way be construed as committing the Project Manager/Architect/Engineer, or the Owner, in any way, nor releasing the Contractor from fulfillment of the terms of the Contract.

ARTICLE 7 - SUPERVISION

The Contractor will supervise and direct the work. He/She will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor will employ and maintain on the work site a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present and on the site at all times as required to perform adequate supervision and coordination of work.

The Owner and its representatives will, at all times, have access to the work. In addition, authorized representatives and agents of any participating federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the work and also for any inspection or testing thereof.

The Contractor shall submit a proposed program of operation, showing clearly how he/she proposes to conduct the work so as to bring about the completion of his/her work within the time limit specified. This program shall outline the proposed sequence of operations, the rates of progress and the dates when his/her work will be sufficiently advanced to permit the installation of the work under other contracts, and the estimated progress payments due under the Contract. The work under this contract shall be so scheduled that as structures are completed, they can be placed into useful operation with a minimum of delay. The program shall be subject to the approval of the Owner.

All construction as proposed along all City, Township, State and Federal rights of way including storage and stockpiling of materials, is to be conducted within the limits of the public right-of-way. Bracing, sheeting, and shoring shall be used to keep all construction work within the construction limits unless work agreements are secured from the adjacent property owners. It is the Contractor's responsibility to secure these work agreements, if deemed necessary. Copies of the work agreements shall be delivered to the Project Manager/Architect/Engineer and the Owner prior to any work beginning on the affected property.

ARTICLE 8 - EQUIPMENT

The Contractor shall furnish such equipment as is considered necessary for the prosecution of the work in an acceptable manner and at a satisfactory rate of progress. All equipment, tools, and machinery used for handling materials and executing any part of the work shall be subject to the approval of the Project Manager/Architect/Engineer and shall be maintained in a satisfactory working condition. Equipment used on all portions of the work shall be such that no injury to work, adjacent property, or other objects will result from its use. The contract may be annulled if the Contractor fails to provide adequate equipment for the work.

ARTICLE 9 - SAFETY

The Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. He/She will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury, or loss to all employees of the work and other persons who may be affected thereby, and all the work and all materials or equipment to be incorporated therein, whether in storage on and off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor will erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety protection. He/She will notify owners of adjacent utilities when prosecution of the work may affect them.

The Contractor shall comply with the safety standards provisions of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-586), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register", Volume 36, No. 75, Saturday, April 17, 1971. The Contractor shall also comply with Chapter 4104.9-2 of the Ohio Revised Code prohibiting the Employment of Minors in Occupations Hazardous or Detrimental to their Health.

The Contractor shall maintain at his/her office or other well-known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured at the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.

Lights, signs, and barricades shall be used to maintain traffic and safety for vehicular and pedestrian traffic during the course of this contract in accordance with the specifications.

ARTICLE 10 - INDEMNIFICATION

The Contractor shall indemnify and save the Owner or the Owner's agents harmless from all claims growing out of the lawful demands of Subcontractor's laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so the Owner may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of the Contractor Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor, his/her Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Owner shall be considered as a payment made under the Contract Documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments in good faith.

ARTICLE 11 - CONSTRUCTION SCHEDULE

The date of beginning and the time for completion of the work are essential conditions of the Contract Documents. Bidders shall submit a proposed construction schedule with the bid, with the understanding that the project shall commence work under the contract on or before a date to be specified in the written "Notice to Proceed" of the Owner. Substantial completion of the project shall occur within 60 days of commencement. Once work commences it shall be continuous until complete. The Owner and Contractor shall mutually agree on a commencement date to be specified in the Notice to Proceed.

The Contractor will proceed with the work at such rate of progress as to ensure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract Time for the completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

If the Contractor shall fail to complete the work within the Contract Time, or extension of time granted by the Owner, the Contractor will pay to the Owner for liquidated damages \$250.00 for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents.

ARTICLE 12 - COMPLETION OF WORK

The Contractor shall guarantee all materials and equipment furnished for a period of one year from the date of Substantial Completion. The Contractor warrants and guarantees for a period of one year from the date of Substantial Completion of the improvement that it is free from all defects due to faulty materials or workmanship, and the Contractor shall promptly make corrections as may be necessary by reason of such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make repairs, adjustments, or other work which may be

made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period. When the work, including that performed by Subcontractors, is completed, the site shall be cleaned of all rubbish and debris caused by the construction and all privately owned property shall be returned to its original condition. All sheds or other temporary structures, surplus materials, and equipment shall be removed and the project left in a neat and presentable condition.

ARTICLE 13 - LAWS AND REGULATIONS

The Contractor shall keep himself fully informed of all Federal and State Laws in any way affecting those engaged or employed in the work, the material used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or political subdivisions having any jurisdiction or authority over the same. If any discrepancy or inconsistency shall be discovered in this Contract or in the Drawings and Specifications herein referred to in relation to any such law, regulation, decree, or order, the Contractor shall forthwith report the same in writing to the Engineer. He/She shall at all times himself observe and comply with, and shall cause all of his/her agents and employees to observe and comply with, all such existing and future laws, regulations, orders and decrees; and shall protect and indemnify the Park District, its officers and agents against any claims or liability arising from or based on the violation of such law, regulation, order or decree whether by himself or by his employees.

ARTICLE 14 - SUBCONTRACTS

The Contractor shall not sublet, sell, transfer or assign any portion of the contract without written consent of the Owner or the Owner's designated agent. When such consent is given, the Contractor will be permitted to sublet a portion thereof, but shall perform with his/her own organization, work amounting to no less than fifty percent of the total contract cost, except any item designated in the contract before computing the amount of work required to be performed by the Contractor with his/her own organization. No subcontract, or transfer of contract, shall in any way release the Contractor or his/her liability under the contract and bonds.

The Contractor shall not award work to subcontractor(s) without prior written approval of the Owner and after submission of all certifications as required in the Instructions to Bidders. The Contractor shall be fully responsible to the Owner for the acts and omissions of the subcontractor(s), and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

ARTICLE 15 - ASSIGNMENT

The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of this Contract or his right, title, or interest in or to the same or any part thereof, without the previous consent in writing of the Owner endorsed herein or hereby attached; and he shall not convey by power of Attorney or otherwise, any of the moneys to become due and payable under this Contract unless, by and with, like consent signified in a like manner. If the Contractor shall, without previous written consent, assign, transfer, convey, sublet or otherwise dispose of his/her Contract or his/her right, title or interest therein or any moneys to become due under this Contract to any person, firm or corporation, this Contract may, at the option of the Owner, be revoked and annulled and the Owner shall thereupon be relieved and

discharged from any and all liabilities and obligations growing out of the same to the Contractor and to his/her assignee or transferee; provided that nothing herein contained shall be construed to hinder, prevent, or affect an assignment by the Contractor for the benefit of his/her creditors, made pursuant to the statutes of the State of Ohio; and no right under this Contract, or to any moneys to become due hereunder, shall be asserted against the Board in law or equity, by reason of any so-called assignment of this Contract, or any part thereof, or any moneys become due hereafter unless authorized by written consent of the Owner.

ARTICLE 16 - CHANGE OF WORK

The Owner reserves the right to make, at any time during the progress of the work, such increases or decreases in quantities and such alterations in details of work as may be deemed necessary or desirable. Such increases or decreases and alterations shall not invalidate the contract nor release the surety, and the Contractor agrees to perform the work as altered, the same as if it had been a part of the original contract.

Authorized alterations in plans or quantities of work involving work not covered by unit prices in the proposal shall be paid for as stipulated in the change order authorizing such work. No changes in work covered by the approved Contract shall be made without having prior written approval of the Owner.

ARTICLE 17 - ESTIMATED QUANTITIES

The quantities of the various classes of work to be done and materials to be furnished under this Contract, which have been estimated as stated in the Advertisement of the Bid, are approximate and only for the purpose of comparing, on a uniform basis, the bids offered for the work under this Contract. Neither the Owner, nor any of its officers or agents thereof, are held responsible because any of the said estimated quantities shall be found to be greater or less on the completion of work. The Contractor shall make no claim for anticipated profits or for loss of profits because of a difference between the quantities as established for the final estimate and the various estimated quantities stated in the Proposal.

ARTICLE 18 - PARTIAL ESTIMATES

Each month the Engineer will make in writing an estimate of the amount and value of the work and the materials incorporated in the work by the Contractor in the performance of this Contract. The Contractor shall aid the Engineer in the preparation of this estimate by submitting to him at the start of each month an estimate of the work he has accomplished during the preceding month, broken down by items and containing supporting computations. The first such estimate shall be of the amount and value of the work done and the materials incorporated in the work since the Contractor commenced the performance of the Contract. Every subsequent estimate, except the final estimate, shall be of the amount and value of the work done and materials incorporated in the work since the last preceding estimate was made; provided, however, that no such estimate shall be required to be made when, in the judgment of the Project Manager/Architect/Engineer, the total value of the work done and material incorporated in the work since the last preceding estimate amounts to less than two thousand dollars. At the discretion of the Project Manager/Architect/Engineer allowances may be made for non-

perishable materials which are to be incorporated in the work, when delivered and properly stored upon the site. Payment for materials and equipment delivered and stored as specified above shall be based upon certified paid invoices to be submitted by the Contractor and title to the same shall be vested with the Owner upon payment therefore. The Contractor's plant shall not be included in partial estimates, such estimates shall not be required to be made by strict measurement, but they may be made by measurement or by estimation, or partly by one method and partly by the other, and it shall be sufficient if they are approximate only. Such estimates shall be dated as of the last day of the month covered by the estimate, except the final estimate.

ARTICLE 19 - PARTIAL PAYMENTS

Before the contract is fifty percent completed, labor performed on the project and materials delivered on site shall be paid for at a rate of ninety-two percent of the estimates for partial payment as submitted by the Contractor, checked and prepared by the Project Manager/Architect/Engineer, and approved by the Project Manager/Architect/Engineer.

ARTICLE 20 - ADJUSTMENT OF RETAINED PERCENTAGES

After the Contract is more than fifty percent completed, labor performed shall be paid for at the rate of one hundred percent of the estimates submitted by the Contractor, checked and approved by the Project Manager/Architect/Engineer.

All materials delivered on the site after the Contract is fifty percent completed shall be paid for at a rate of ninety-two percent of the invoiced value of the material. The balance of such estimate shall be paid when the material is incorporated into and becomes a part of the project.

The Contract shall be fifty percent completed when the Contractor has been paid an amount equal to fifty percent of the total cost of the labor of the Contract and fifty percent of the total cost of the material of the Contract.

ARTICLE 21 - PARTIAL PAYMENT MAY BE WITHHELD

Partial payments may at any time be withheld or reduced if, in the opinion of the Project Manager/Architect/Engineer, the work is not proceeding in accordance with this Contract.

ARTICLE 22 - FINAL ESTIMATE

When, in the opinion of the Project Manager/Architect/Engineer, all the work contemplated by this Contract is completed, he shall measure up said work and prepare a final estimate of the same. The Contractor shall aid the Project Manager/Architect/Engineer in the preparation of this estimate by submitting to him, as soon as possible following the completion of work an estimate of the work he has done under this Contract, broken down by items and containing supporting computations. The Owner shall, within thirty days after receiving the said final estimate, make payment of ninety-six percent of the amount of said estimate, less previous payments to the Contractor and such other sums as may lawfully be retained under the terms of this Contract, provided that all terms of this Contract have been

complied with by said Contractor. Such estimate shall be dated as of the day on which the Contractor shall have completed the work called for to be done under this Contract.

ARTICLE 23 - FOUR PERCENT RESERVE

The said Contractor hereby further agrees that the Owner shall be, and is hereby authorized to retain for a period of thirty days subsequent to the date of the final acceptance of work, out of the money payable to said Contractor under this agreement, the sum of four percent of the amount of the Contract, and to expend the same in making such repairs of the said work for which the Contractor is responsible as the Project Manager/Architect/Engineer may deem necessary in case such repairs are neglected by the Contractor after reasonable notice.

ARTICLE 24 - REPAIRS FOR ONE YEAR

The Contractor shall make all repairs due to defective workmanship of material for the term of one year after the date of the final estimate; shall correct and repair promptly during that time all defective work and material of whatever description; and shall deliver the work in all respects in good condition at the end of that time. However, ordinary wear and tear, or damage due to negligent or improper operation on the part of the Owner, shall not be considered an obligation of the Contractor. Twelve months after the date of the final estimate, as hereinbefore mentioned, and as soon after the expiration of the said twelve months as practicable, the Owner shall make or cause to be made a final inspection of the performance of this Contract.

If such performance and work shall be found satisfactory and not to have deteriorated through defects of workmanship or material, then the Owner shall accept said work. Such acceptance shall be a prerequisite to the release of the surety on the warranty bond. If, however, the final or any prior inspection discloses defects due to non-fulfillment of this Contract, or non-compliance with its requirements, the Owner shall so notify the Contractor in writing and thereupon the Contractor shall, at his/her own expense, repair or replace and shall make good all defects of materials, workmanship, or guarantee. Such repairs shall be a prerequisite to the approval and acceptance of the work and the release of the surety on the warranty bond. In case the Contractor shall neglect or fail to promptly make said repairs, after written notification, the Owner shall cause such repairs to be made at the expense of the Contractor.

ARTICLE 25 - FINAL PAYMENT

The Owner agrees that upon the expiration of said period of thirty (30) days, provided all the work shall at that time be in good order and approved by the Owner following the final inspection, the said Contractor shall be entitled to receive the whole or that part of the above mentioned sum as may remain after the expense of making such repairs shall have been paid thereto. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

The Owner hereby agrees to pay and the Contractor hereby further agrees to receive in full compensation for furnishing all materials and doing all work as contemplated and set forth by these Specifications and the accompanying drawings, the several sums and prices set forth in the proposal sheet hereto attached.

ARTICLE 26 - LIENS

If, at any time within thirty (30) days after the whole work herein agreed to be performed and all labor and material herein agreed to be delivered have been performed and delivered or completed and accepted by the Owner, any person or persons claiming to have performed any labor or furnishing any materials toward the performance or completion of this Contract shall file with the Owner notice according to law, the Owner shall retain until the discharge thereof, from all money under its control, such moneys as shall be sufficient to satisfy and discharge the amount in such notice claimed to be due, together with the costs of any action or actions brought to enforce such lien created by the filing of such notice.

ARTICLE 27 - TERMINATION

After ten (10) days from delivery of a written Notice to the Contractor, the Owner may, without cause and without prejudice to any other right or remedy elect to terminate the Contract. In such case the Contractor shall be paid for all work executed and any expense sustained. Contractor shall also be entitled to reasonable profit, unless such termination was due to the act or conduct of the Contractor.

ARTICLE 28 – CONTRACT TIMES

The times for Substantial Completion and final completion are to be set forth by Bidder in the Bid and will be set forth in the Agreement (or incorporated therein by reference to the specific language of the Bid). The times will be taken into consideration by Owner during the evaluation of the Bids, and it will be necessary for the apparent successful Bidder to satisfy Owner that it will be able to achieve Substantial Completion and final completion within the times designated in the Bid. Substantial Completion is desired within 90 days of commencement of work and final completion is desired within 120 days of commencement of work. The Notice to Proceed is anticipated to be issued approximately ten days after award. No extension of the contractor's completion dates will be allowed if the Notice to Proceed is issued within sixty days of the bid opening.

SPECIAL PROVISIONS

SPECIAL PROVISIONS

ARTICLE 1. Physical Data

The Contractor shall make all explorations necessary to locate structures to which connections are to be made without extra expense to the Owner.

ARTICLE 2. Night Work

No work shall be done during the hours between sunset and sunrise without the prior approval or order of the Project Manager/Architect/Engineer.

ARTICLE 3. Work on Sunday and Holidays

No work will be permitted on Sundays or on legal holidays except upon the specific authorization or direction of the Project Manager/Architect/Engineer (to be authorized only in case of extreme emergency).

ARTICLE 4. Protection of Existing Structures

The Contractor shall make such investigations as are necessary to determine the extent to which existing structures may interfere with the prosecution of the work contemplated under this Contract.

Any existing surface, subsurface or overhead structures damaged or destroyed shall be promptly repaired or replaced by the Contractor in a satisfactory manner at his own cost and expense.

ARTICLE 5. Care and Protection of Work

From the commencement of the work until the completion thereof, the Contractor shall be solely responsible for the work covered by this Contract and for all materials and equipment used or intended to be used in the work. All destruction, injury or damage to the same from whatever cause, as well as any damage done by him, his employees, and his subcontractors in the performance of this work shall be made good by him at his own expense before the final estimate is made. He shall provide suitable means of protection for all materials and equipment intended to be used in the work and for all work in progress as well as for the completed work.

ARTICLE 6. Cleaning Up

The Contractor shall keep the site of the work free from trash, litter and waste materials and shall maintain the same in a neat and orderly condition throughout the period of work.

ARTICLE 7. Examination of Finished Work

The Contractor shall furnish the Project Manager/Architect/Engineer with every reasonable facility for ascertaining whether or not the work as performed is in accordance with the requirements and intent of the Specifications and Contract. If the Project Manager/Architect/Engineer requires it, at any time before

acceptance of the work, the Contractor shall remove or uncover such portion of the finished work as may be directed for examination. The Contractor shall restore said portion of the work to the standards required by the Specifications. Should the work thus exposed or examined above prove acceptable, the uncovering, removing, replacing of the covering, or making good of the parts removed shall be paid for by the Owner; except that any work done or materials used without suitable supervision or inspection by a representative of the Project Manager/Architect/Engineer may be ordered removed and replaced at the Contractor's expense. However, should the work exposed or examined prove unacceptable, either in whole or part, the uncovering, removing, replacing of the covering and making good of the parts removed shall be at the Contractor's expense.

The Contractor shall, when directed, remove all water which may accumulate in or about the work during construction, or prior to the final acceptance of the same, in order that proper inspection may be made.

ARTICLE 8. Safety Precautions

Precautions shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws, and building and construction codes shall be observed.

ARTICLE 9. First Aid

The Contractor shall provide and keep upon the work site a completely equipped first-aid kit and shall provide ready access thereto at all times when men are employed on the work. He shall designate some proper person to be in charge of the first-aid work site and shall cause such person to receive proper instruction therein.

ARTICLE 10. Posting Wage Rates

The Contractor shall post at conspicuous points at the site of the project a schedule showing all determined wage rates.

ARTICLE 11. Wage Rates

In the event that the rate of wages paid for any trade or occupant in the locality where such work is being performed are under current collective agreements or understandings between bona fide organizations of labor and employer, then the wage to be paid shall be not less than such agreed wage rates, nor less than the minimum rates compiled by the Ohio Department of Commerce, Bureau of Labor and Worker Safety

Every Contractor and Subcontractor who is subject to this contract shall, as soon as he/she begins performance under his/her contract with the Owner, supply the Owner a schedule of dates of which he/she is required to pay wages to employees. He/She shall also deliver to the prevailing wage coordinator within three weeks after every pay date, a certified copy of his/her payroll which shall exhibit for each employee paid any wages, name, current address, social security number, number of hours worked each day on the pay period and the total for each week, hourly rate of pay, job classification, fringe benefits, and deductions from wages. The certification of each payroll shall be executed by the Contractor, Subcontractor, or duly appointed agent thereof and shall recite that the payroll is correct and complete and that the wage rate shown is not less than those required by the contract.

ARTICLE 12. Insurance

Requirements for all Insurance Coverages

Notices to Owner and Other Additional Insured

The policy shall provide and the Certificate shall reflect the fact the Owner and all other additional insured shall receive at least 30 days notice of any cancellation or change in the coverage (except for nominal changes) adverse to the interests of the Owner and other additional insured in order for such cancellation or change in coverage to be effective. The Owner and other additional insured shall be provided with any notice or non-renewal, regardless of the cause.

Additional Insured

The insurance required by this Section shall include the interests of the Contractor and its subcontractors, the Engineer and its subconsultants in the work, including each of their respective employees, all of whom shall be listed as insured or as additional insured. The Owner's financing agency shall also be listed as an additional insured, as necessary.

Policy Format

All policies shall be the Insurance Service Office's current form or better.

General Liability

Types of Insurance: The policy should provide at a minimum, the following coverages and the Certificate of Insurance shall so indicate whether the coverage is provided in the basic policy or in supplemental coverage to negate an exclusion in the basic policy:

- Comprehensive Form
- Premises/Operations
- Underground, Explosion and Collapse Hazard (Underground and Collapse Hazard coverage required only for General Construction Contractor and others doing excavation and other earthwork)
- Products/Completed Operations
- Contractual
- Independent Contractor
- Broad Form Property Coverage

Liability Limits: The liability limits for the coverages noted above shall be at least as noted below.

	Liability Limits	
	Each Occurrence	Aggregate
BI & PD Combined (CSL)	\$ 1,000,000	\$ 1,000,000

Automobile Liability

Types of Coverage: The policy shall include at least the following types of coverage:

- Any Auto
- All Owner Autos (Priv. Pass.)
- All Owned Autos (Other than Priv. Pass.)

- Hired Autos
- Non-Owned Autos

Liability Limits: The liability limits for the coverages noted above shall be at least as noted below.

	Liability Limits	
	Each Occurrence	Aggregate
BI & PD Combined	\$ 1,000,000	\$ 1,000,000

Owners Protective Liability Policy: The liability limits for the coverages noted above shall be at least as follows:

	Liability Limits	
	Each Occurrence	Aggregate
BI & PD Combined	\$ 1,000,000	\$ 1,000,000

Builders Risk/Installation Floater

Types of Coverage

The Contractor shall insure for the life of the contract against all loss or damage by fire, flood other than National Flood Insurance (whether in a flood hazard area or not), hurricane, windstorm, hail, lightning, explosion, riot civil commotion, aircraft, smoke, vehicles and other hazards covered by the standard current I.S.O. standard fire and extended coverage insurance endorsement. Coverage shall also be provided for all materials and equipment for which pre-incorporation payment is requested.

Limits of Liability: The limit of liability for the coverage noted above shall be not less than the amount of the Contract.

Contractor's Insurance Agent E/O Certificate

Contractor's insurance agent shall provide the Park District with Agent's Errors and Omissions Certificate in the minimum amount of One Million Dollars (\$ 1,000,000.00)

Article 13. Prompt Payment

In accordance with Section 4113.61 of the Ohio Revised Code, the prime Contractor shall make payment to each subcontractor and materialman within ten (10) calendar days after receipt of payment from the OWNER if Direct Pay for work performed or materials delivered or incorporated into the public improvement, provided that the pay estimate prepared by the Project Manager/Architect/Engineer includes work performed or materials delivered or incorporated into the public improvement by the subcontractor or materialman.

The prime Contractor shall also require that this contractual obligation be placed in all subcontractor and materialman contracts that it enters into and further require that all subcontractors and materialmen place the same payment obligations in each of their lower tier contracts. If the prime Contractor, subcontractors or materialmen subject to this provision fail to comply with the ten (10) day payment requirement, the offending party shall pay, in addition to the payment due, interest in the amount of eighteen percent (18%) per annum of the payment due, beginning on the eleventh (11th) day following the receipt of payment from the OWNER and ending on the date of full payment of the payment due plus interest.

Repeated failures to pay subcontractors and materialmen timely as defined by this statute shall result in a finding that the prime is in breach of contract and subject to all legal consequences that such a finding entails. Further, repeated failures to pay timely as defined by the statute shall result in a lower evaluation score for the prime Contractor and those subcontractors who are subject to evaluation.

Article 14. Ohio Workers' Compensation Coverage

The Contractor shall secure and maintain valid Ohio Worker's Compensation Coverage until final acceptance of the project by the OWNER. If the Contractor is a foreign corporation (incorporated under the laws of another state), then the Contractor shall have coverage in another state that provides reciprocal coverage in the State of Ohio or the foreign corporation shall maintain coverage through the Ohio Bureau of Worker's Compensation. A certificate of coverage evidencing valid worker's compensation coverage shall be submitted to the OWNER before the contract shall be executed.

The Contractor must immediately notify the OWNER in writing if it or any subcontractor fails or refuses to renew their workers' compensation coverage. Furthermore, the Contractor must notify the OWNER in writing if its or any of its subcontractor's workers' compensation policies are canceled, terminated or lapse.

The failure to maintain valid workers' compensation coverage shall be considered a breach of contract which may result in the Contractor or subcontractor being removed from the project, withholding of pay estimates and/or termination of the contract.

Article 15. Unresolved Finding For Recovery

Contractor affirmatively represents to the OWNER that it is not subject to a finding for recovery under R.C. 9.24, or that it has taken the appropriate remedial steps required under R.C. 9.24 or otherwise qualifies under that section. Contractor agrees that if this representation is deemed to be false, the contract shall be void ab initio as between the parties to this contract, and any funds paid by the state hereunder shall be immediately repaid to the state, or an action for recovery may be immediately commenced by the state for recovery of said funds.

Article 16. Drug-Free Workplace Compliance

The prime Contractor agrees to comply with all applicable state and federal laws regarding drug-free workplace. The prime Contractor shall make a good faith effort to ensure that all its employees, while working on the Project, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.

The prime Contractor shall also require that this contractual obligation be placed in all subcontractor and materialman contracts that it enters into and further requires that all subcontractors and materialmen place the same contractual obligations in each of their lower tier contracts.

Article 17. Certification Against Debarment And Suspension

The bidder hereby certifies, except as noted below, under penalty of perjury and under other such penalties as the laws of this state and the United States of America provide, that the company or any person associated there with in the capacity of owner, partner, director, officer, principal investigator,

project director, manager, auditor, or any position involving the administration of federal funds is **not** currently under suspension, debarment, voluntary exclusion or determination of ineligibility by any federal agency; that the company or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds has **not** been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past three (3) years; that the company or any person associated therewith in the capacity of owner, partner, director, manager, auditor, or any position involving the administration of federal funds does **not** have a proposed debarment pending; that the company or any person associated there with in the capacity of owner, partner, director, officer, principal investigator has **not** been indicted, convicted, or had a civil judgment rendered against the company, or themselves by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years.

If there are exceptions to any of the above clauses please set out the exceptions on the lines below. Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, initiating agency and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Execution of this proposal on the signature portion thereof shall constitute also signature of this certification as permitted by Title 28 United States Code, Section 1746.

PREVAILING WAGE CONTRACTOR RESPONSIBILITIES

Wages and Hours on Public Works (Prevailing Wage)

[ORC Chapter 4115: Wages And Hours On Public Works \(Prevailing Wage\)](#)

General Information

Ohio's prevailing wage laws apply to all public improvements financed in whole or in part by public funds. This applies when the total overall project cost is fairly estimated, as of January 1, 2018, for New Building Construction to be at least \$250,000 and for Building Construction that is "reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting" to be estimated to cost at least \$75,000.

Thresholds are to be adjusted biennially (every 2 years) by the Director of the Ohio Department of Commerce.

Penalties For Violation

Violators are to be assessed the wages owed, plus a penalty of 100% of the wages owed.

Intentional Violations

If an intentional violation is determined to have occurred, the contractor is prohibited from contracting directly or indirectly with any public authority for the construction of a public improvement. Intentional violation means "a willful, knowing, or deliberate disregard for any provision" of the prevailing wage law and includes but is not limited to the following actions:

- a. Intentional failure to submit payroll reports as required, or knowingly submitting false or erroneous reports.
- b. Intentional misclassification of employees for the purpose of reducing wages.
- c. Intentional misclassification of employees as independent contractors or as apprentices.
- d. Intentional failure to pay the prevailing wage.
- e. Intentional failure to comply with the allowable ratio of apprentices to skilled workers as required by the regulations established by Ohio Department of Commerce, Wage and Hour Bureau.
- f. Intentionally employing an officer, of a contractor or subcontractor, that is known to be prohibited from contracting, directly or indirectly, with a public authority.

Responsibilities

- A. Pay the prevailing rate of wages as shown in the wage rate schedules issued by the Ohio Department of Commerce, Wage and Hour Bureau, for the classification of work being performed. (Website: <http://com.ohio.gov/laws/>)
 1. Wage rate schedules include all modifications, corrections, escalations, or reductions to wage rates issued for the project
 2. Overtime must be paid at time and one-half the employee's base hourly rate. Fringe benefits are paid at straight time rate for all hours including overtime.
 3. Prevailing wages must be paid in full without any deduction for food, lodging, transportation,

use of tools, etc. unless, the employee has voluntarily consented to these deductions in writing. The public authority and the Chief of Wage and Hour Bureau must approve these deductions as fair and reasonable. Consent and approval must be obtained before starting the project.

- B. Use of Apprentices and Helpers cannot exceed the ratios permitted in the wage rate schedules.
 - 1. Apprentices must be registered with the Ohio State Apprenticeship Council.
 - 2. Contractors must provide the Prevailing Wage Coordinator a copy of the Apprenticeship Certification for each apprentice on the project.

- C. Keep full and accurate payroll records available for inspection by any authorized representative of the Ohio Bureau of Wage and Hour or the contracting public authority, including the Prevailing Wage Coordinator. Records should include but are not limited to:
 - 1. Time cards, time sheets, daily work records, etc.
 - 2. Payroll ledger\journals and canceled checks\check register.
 - 3. Fringe benefit records must include program name, address, account number, and canceled checks.
 - 4. Records made in connection with the public improvement must not be removed from the State for one (1) year following the completion of the project.
 - 5. Out-of-State Corporations must submit to the Ohio Secretary of State the full name and address of their Statutory Agent in Ohio.

- D. Prevailing Wage Rate Schedule must be posted on the job site where it is accessible to all employees.

- E. Prior to submitting the initial payroll report, supply the Prevailing Wage Coordinator with your project dates to schedule reporting of your payrolls.

- F. Supply the Prevailing Wage Coordinator a list of all subcontractors including the name, address, and telephone number for each.
 - 1. Contractors are responsible for their subcontractors' compliance with requirements of [Chapter 4115](#) of the [Ohio Revised Code](#).

- G. Before employees start work on the project, supply them with written notification of their job classifications, prevailing wage rates, fringe benefit amounts, and the name of the Prevailing Wage Coordinator for the project.

- H. Supply all subcontractors with the Prevailing Wage Rates and changes.

- I. Submit certified payrolls within two (2) weeks after the initial pay period. Payrolls must include the following information:
 - 1. Employees' names, addresses, and social security numbers.
 - a. Corporate officers/owners/partners and any salaried personnel who do physical work on the project are considered employees. All rate and reporting requirements are applicable to these individuals.

2. Employees' work classification.
 - a. Be specific about the laborers and/or operators.
 - b. For all apprentices, show level/year and percent of journeyman's rate.
 3. Hours worked on the project for each employee.
 - a. The number of hours worked in each day and the total number of hours worked each week.
 4. Hourly rate for each employee.
 - a. The minimum rate paid must be the wage rate for the appropriate classification. The Department's Wage Rate Schedule sets this rate.
 - b. All overtime worked is to be paid at time and one-half for all hours worked more than forty (40) per week.
 5. Where fringes are paid into a bona fide plan instead of cash, list each benefit and amount per hour paid to program for each employee.
 - a. When the amount contributed to the fringe benefit plan and the total number of hours worked by the employee on all projects for the year are documented, the hourly amount is calculated by dividing the total contribution of the employer by the total number of hours worked by the employee.
 - b. When the amount contributed to the fringe benefit is documented but not the total hours worked, the hourly amount is calculated by dividing the total yearly contribution by 2,080.
 6. Gross amount earned on all projects during the pay period.
 7. Total deductions from employee's wages.
 8. Net amount paid.
- J. The reports shall be certified by the contractor, subcontractor, or duly appointed agent stating that the payroll is correct and complete; and that the wage rates shown are not less than those required by the [O.R.C. 4115](#).
- K. Submit the notarized Affidavit Regarding Prevailing Wages with the final statement of billing upon the completion of the project.

PROPOSAL and BID FORMS

BID PROPOSAL
BRADY SWITCH TOWER REPAIRS
PORTAGE PARK DISTRICT, OHIO

Federal ID# or Social Security #: _____

Name of Bidder: _____

Address of Bidder: _____

Phone No.: _____

Fax No.: _____

Email: _____

Contact Person: _____

Date: _____

Proposal of _____ (hereinafter called "Bidder")* a corporation, organized and existing under the laws of the State of _____,** a partnership, or an individual doing business as _____.

To the **Portage Park District** (hereinafter called "Owner")

Gentlemen/Ladies:

The Bidder, in compliance with your invitation for bids for the **Brady Switch Tower Repairs, Portage County, Ohio, offers the following proposal. The work to be performed as part of this Contract: Improvements to two-story concrete building, including concrete repairs, replacement of exterior stairs. The architect's estimate of probable cost, including contingencies, is \$101,400.00.**

The bidder having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish labor, materials, equipment, and supplies and to construct the project in accordance with the contract documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the written "Notice to Proceed" of the Owner and to Substantially Complete with the project within 60 days after Notice to Proceed. Bidder further agrees to pay as liquidated damages, the sum of \$250.00 for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

GENERAL CONTRACT BASE BID

Total for the sum of: \$ _____
_____.

(written amount)

Additional sum for Alternate 3 option:

(Note: Alternates 1 and 2 have been removed from this bid package)

\$ _____
_____.

(written amount)

BID TABS: Bid totals above shall reflect the bid tabs by item as detailed in the following pages

SCHEDULE Bidder has included a Resource Loaded Project Schedule with their bid

The bidder agrees that this bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, bidder will execute the formal contract attached within ten (10) days and deliver a Surety Bond or Bonds as required by the General conditions.

The bid security attached in the sum of _____

_____ (\$ _____) is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

I _____ representing _____
(print name of representative) (print name of company)

submit the above Base Bid and Alternates for the Brady Switch Tower Repairs

Signed _____ on this day _____
(representative) (date)

**BRADY SWITCH TOWER REPAIRS
UNIT PRICES**

EA: Each

LF: Linear Foot

LS: Lump Sum

SF: Square Foot

Construction and Repairs	Unit	Cost
Structural Repairs		
Vertical interior -partial depth wall	SF	
Vertical interior -partial depth column	SF	
Epoxy Injection crack repairs	LF	
Overhead -partial depth soffit slab	SF	
Overhead -partial depth beams	SF	
Façade Epoxy Injection crack repairs	LF	
Façade -partial depth wall	SF	
Façade -partial depth beam	SF	
Façade -partial depth soffit slab	SF	

**AFFIDAVIT OF CONTRACTOR OR SUPPLIER OF NON-DELINQUENCY
OF PERSONAL PROPERTY TAXES**

O.R.C. 5719.042

STATE OF OHIO)
)ss:
COUNTY OF _____)

TO: Portage Park District

The undersigned, being first duly sworn, having been awarded a contract by you for the BRADY SWITCH TOWER REPAIRS Portage County, Ohio, hereby states that we were not charged at the time the bid was submitted with any delinquent personal property taxes on the general tax list of personal property of any county in which you as a taxing district have territory and that we were not charged with delinquent personal property taxes on any such tax list.

In consideration of the award of the above contract, the above statement is incorporated in said contract as a covenant of the undersigned.

Affiant

Sworn to before me and subscribed in my presence this ____ day of _____, 20__.

Notary Public

CERTIFICATION OF COMPLIANCE WITH SECTION 3517.13 OF THE O.R.C.

CONTRACTS AWARDED TO INDIVIDUAL, PARTNERSHIP, OTHER UNINCORPORATED BUSINESS, ASSOCIATION (INCLUDING A PROFESSIONAL ASSOCIATION ORGANIZED UNDER CHAPTER 1785), ESTATE, OR TRUST MUST CONTAIN THE FOLLOWING CERTIFICATION:

Any contract for goods or services costing more than five hundred dollars must contain a certification by the contracting entity (vendor) that all of the following persons are in compliance with 3517.13(1)(1), limiting campaign contributions to the holder of the public office having the ultimate responsibility for the award of the contract:

- THE INDIVIDUAL
- EACH PARTNER OR OWNER OF THE PARTNERSHIP OR UNINCORPORATED BUSINESS
- EACH SHAREHOLDER OF THE ASSOCIATION
- EACH ADMINISTRATOR OF THE ESTATE
- EACH EXECUTOR OF THE ESTATE
- EACH TRUSTEE OF THE TRUST
- EACH SPOUSE OF ANY OF THE PRECEEDING PERSONS
- EACH CHILD SEVEN YEARS TO SEVENTEEN YEARS OF AGE OF ANY OF THE PRECEEDING PERSONS
- ANY COMBINATION OF THE PERSONS LISTED ABOVE

CONTRACTS A WARDED TO A CORPORATION OR BUSINESS TRUST (EXCEPT A PROFESSIONAL ASSOCIATION ORGANIZED UNDER CHAPTER 1785) MUST CONTAIN THE FOLLOWING CERTIFICATION:

Any contract for goods or services costing more than five hundred dollars must contain a certification by the contracting entity (vendor) that all of the following persons are in compliance with 3517. 13(J)(1), limiting campaign contributions to the holder of the public office having the ultimate responsibility for the award of the contract:

- EACH OWNER OF MORE THAN TWENTY PER CENT OF THE CORPORATION OR BUSINESS TRUST
- EACH SPOUSE OF AN OWNER OF MORE THAN TWENTY PER CENT OF THE CORPORATION OR BUSINESS TRUST
- EACH CHILD SEVEN YEARS TO SEVENTEEN YEARS OF AGE OF AN OWNER OF MORE THAN TWENTY PER CENT OF THE CORPORATION OR BUSINESS TRUST
- ANY COMBINATION OF THE PERSONS LISTED ABOVE

It is hereby certified that all of the persons listed above are in compliance with section 3517.13(1)(1) or 3517.13(J)(1) of the Ohio Revised Code.

IF CONTRACTING ENTITY IS A NONPROFIT CORPORATION ESTABLISHED UNDER ORC CHAPTER 1702, THE UNDERSIGNED CERTIFIES THAT SECTIONS 3517.13(1)(1) AND 3517.13(J)(1) ARE NOT APPLICABLE TO THE CONTRACTING ENTITY.

PRINTED NAME

TITLE

SIGNATURE

DATE

AFFIDAVIT OF COMPLIANCE WITH OHIO REVISED CODE SECTION 3517.13

STATE OF OHIO)
)SS
COUNTY OF _____)

_____ being duly sworn, deposes and states as follows:

1. I am duly authorized to make the statements contained herein on behalf of _____ ("the Contracting Party").

2. The Contracting Party is a/an (select one):
 - Individual, partnership, or other unincorporated business association (including, without limitation, a professional association organized under Ohio Revised Code Chapter 1785), estate, or trust.
 - Corporation organized and existing under the laws of the State of _____
 - Labor organization
 - Other _____

3. I hereby affirm that the Contracting Party and each of the individuals specified in **R.C. 3517.13(I)** (with respect to non-corporate entities and labor organizations) or **R.C. 3517.13(J)** (with respect to corporations) are in full compliance with the political contribution limitations set forth in **R.C. 3517.13(I)** and **(J)**, as applicable.

Affiant further sayeth naught.

By _____

Title _____

SWORN TO BEFORE ME and subscribed in my presence this _____ day of _____, 20_____.

Notary Public _____

My commission expires _____

NON-COLLUSION AFFIDAVIT

State of Ohio)
)ss
County of _____)

Bid Identification: BRADY SWITCH TOWER REPAIRS, Portage Park District, Ohio

CONTRACTOR _____, being first duly sworn, deposes and says that he/she is _____ (sole owner, a partner, president, secretary, etc.) of _____ the party making the foregoing BID; that such BID is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such Bid is genuine and not collusive or sham; that said BIDDER has not directly or indirectly induced or solicited any other BIDDER to put in a false or sham BID, and has not directly or indirectly colluded, conspired, connived, or agreed with any BIDDER or anyone else to put in a sham BID, or that any one shall refrain from bidding; that said BIDDER has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the BID price of said BIDDER or of any other BIDDER, or to fix any overhead, profit, or cost element of such BID price, or of that of any other BIDDER, or to secure any advantage against the OWNER awarding the contract or anyone interested in the proposed contract; that all statements contained in such BID are true; and, further, that said BIDDER has not, directly or indirectly, submitted his/her BID price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid any fee or will not pay any fee in connection therewith, to any corporation, partnership, company, association, organization, BID depository, or to any member or agent thereof, or to any other individual except to such person or persons as have a partnership or other financial interest with said BIDDER in his/her general business.

Subscribed and sworn to before me this _____ day of _____, 20__.

Affiant

Notary Public

INCOME TAX AFFIDAVIT

STATE OF _____)

)ss

COUNTY OF _____)

_____ being first duly sworn deposes and says as follows:

1. That he holds the office of _____ in _____;
Title Company

2. That said Company will comply in all respects with the Income Tax Ordinances and Regulations, within the Franklin Township or Portage County, as the same pertain to said construction project;

3. More affiant sayeth not.

Authorized Signature

Swore to a subscribed in my presence, this _____ day of _____, 20__.

Notary Public, State of Ohio
My commission expires _____, 20__.
Recorded in _____ County

CERTIFICATION AGAINST DEBARMENT AND SUSPENSION

The bidder hereby certifies, except as noted below, under penalty of perjury and under other such penalties as the laws of this state and the United States of America provide, that the company or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds is **not** currently under suspension, debarment, voluntary exclusion or determination of ineligibility by any federal agency; that the company or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds has **not** been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past three (3) years; that the company or any person associated therewith in the capacity of owner, partner, director, manager, auditor, or any position involving the administration of federal funds does **not** have a proposed debarment pending; that the company or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator has **not** been indicted, convicted, or had a civil judgment rendered against the company, or themselves by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years.

If there are exceptions to any of the above clauses please set out the exceptions on the lines below. Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, initiating agency and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Execution of this proposal on the signature portion thereof shall constitute also signature of this certification as permitted by Title 28 United States Code, Section 1746.

Exceptions:

Signed: _____

Title: _____

UNRESOLVED FINDING FOR RECOVERY CERTIFICATION

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that _____ **does not**
(Company or Individual Name)

have an unresolved finding for recovery issued by the Auditor of the State of Ohio as

defined by Ohio Revised Code (ORC) Section 9.24 as of _____, 20____.
(Date)

Signature of Officer or Agent

Name (Print)

STATE OF _____ (_____)
(ss:
COUNTY OF _____ (_____)

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

Notary Public, State of Ohio

My commission expires _____, 20____.

Recorded in _____ County

BRADY SWITCH TOWER REPAIRS
BID GUARANTY AND CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,
_____1 as Principal and
_____2 as Surety, are hereby held and firmly bound unto
_____3 hereinafter called the Obligee, in the penal sum of the
dollar amount of the bid submitted by the Principal to the Obligee on this date _____ to
undertake the project known as:

BRADY SWITCH TOWER REPAIRS

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, which are accepted by the Obligee. In no case shall the penal sum exceed the amount of _____ DOLLARS (\$_____). If this item 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 alternatives 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 to 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, specifications, and bills of material; and in the event the Principal pays to the Obligee the difference not to exceed ten percent of the penalty hereto between the amount specified in the bid and such larger amount for which the Obligee may in good faith contract with the next lower bidder to perform the work covered by the bid; or in the event the Obligee does not award the contract to the next lower bidder and 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, or printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and 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 the awarding of the contract, enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of material, which said contract is made a part of this bond the same as though set forth herein; and

1 Here insert full name or legal title of Contractor and address

2 Here insert full name or legal title of Surety

3 Here insert full name or legal title of Owner/Obligee

(cont'd)

Bid Guaranty/Contract Bond p2

IF 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, specifications, and bills of material 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 benefit of any subcontractors, materialmen 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 way affect that obligations of said 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 the work or to the specifications.

SIGNED AND SEALED this _____ day of _____, 20__.

Principal By:

Title:

Surety By:

Attorney-in-Fact

Surety Company Address:

Surety Agent's Name/Address:

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The bidder may submit any additional information he desires.

1. Name of bidder?
2. Permanent main office address?
3. When organized?
4. If a corporation, where incorporated?
5. Federal Identification Number?
6. How many years have you been engaged in the contracting business under your present firm or trade name?
7. Contracts on hand (schedule these, showing amount of each contract and the appropriate anticipated dates of completion)?
8. General character of work performed by your company?
9. Have you ever failed to complete any work awarded to you? If so, where and why?
10. Have you ever defaulted on a contract? If so, where and why?
11. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed?
12. List your major equipment available for this contract?
13. Experience in construction work similar in importance to this project?
14. Background and experience of the principal members of your organization, including the officers?
15. Credit available?
16. Give bank reference?
17. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Portage Park District, Ohio?
18. The undersigned hereby authorizes and requests one person, firm, or corporation to furnish any information requested by the Portage Park District, Ohio, in verification of the recitals comprising this Statement of Bidder's Qualifications.

Affidavit (To be attached to Bidder's Statement of Qualifications)

Dated at _____ on this _____ day of _____, 20____.

Name of Bidder: _____

By: _____

Title: _____

State of Ohio)

)ss

County of Portage)

_____ being duly sworn, deposes and says that he is

_____ of _____ and that the answers to the
(Title) (Company)

foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public Signature

My Commission expires _____.

PROPOSED SUBCONTRACTOR BREAKDOWN						
Contractor Name	Address	Phone	Goods/ Services	Total Contracts	Fed I.D. No.	Reg' d MBD(Y/N)

Sworn to and ascribed before me this _____ day of _____, 20____

Company Name

Notary Public Signature

Notary Public in and for County of _____

Signature _____ Title _____

My Commission Expires _____

CONTRACT FORMS

BRADY SWITCH TOWER REPAIRS CONTRACT

THIS AGREEMENT is made this _____ day of _____, 20____, by and between _____, hereinafter called the "Contractor" and the Portage Park District, hereinafter called the "Owner".

The Contractor and the Owner for the considerations stated herein mutually agree as follows:

ARTICLE 1. Statement of Work

The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment, supplies, and services, including utility and transportation services, and perform and complete all work required for the construction of the improvements embraced in the project and required supplemental work for the project all in strict accordance with the Contract Documents.

ARTICLE 2. The Contract Price

The Owner will pay the Contractor at the lump sum price stipulated in the Bid for the respective items of work completed for the sum not to exceed _____ subject to additions and deductions as provided in the Contract Documents.

ARTICLE 3. Contract

The executed Contract Documents shall consist of the following:

- a. This Agreement
- b. Addenda
- c. Invitation to Bid
- d. Instructions to Bidders
- e. Bid Forms
- f. Signed copy of bid
- g. Work Specifications (including all plans, drawings, etc.)
- h. General and Special Provisions
- i. Technical Specifications
- j. State Requirements

(cont'd)
(Contract p2)

This Agreement, together with other documents enumerated in this ARTICLE 3, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision, in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3 shall govern except as otherwise specifically stated.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed in three original copies on the day and year first above written.

CONTRACTOR:

OWNER: **Portage Park District**

Signature

Signature

(Typed Name)

(Typed name)

Title

Title

Vendor

Federal Identification Number:

Certifications:

I, _____, certify that I am the _____ of the corporation
(name) (title)
named as Contractor herein; that _____ who signed this Agreement on behalf
(name)
of the Contractor, was then _____ of said corporation; that said Agreement was
(title)
duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope
of its corporate powers.

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, Portage County Assistant Prosecutor, the duly authorized and acting legal representative of the Portage Park District, do hereby certify as follows:

I have examined the attached contract and surety bond and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligation upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

Pursuant to Ohio Revised Code 153.44 I hereby certify that this contract and the contract documents incorporated herein have been executed in accordance with Ohio Revised Code 153.01 through 153.60 inclusive.

Name, Title

Date: _____

AUDITOR'S CERTIFICATE

I hereby certify that the amount of \$ _____ required to meet the obligation for the above contract has lawfully been appropriated for such purposes and is in the treasury to the credit of Fund No. _____

free from any obligation or certificate now outstanding.

Janet Esposito, Portage County Auditor Signature

Date: _____



INDEPENDENT CONTRACTOR/WORKER ACKNOWLEDGMENT

Ohio Public Employees Retirement System
277 East Town Street, Columbus, Ohio 43215-4642

Employer Outreach: 1-888-400-0965
www.opers.org

This form is to be completed if you are an individual who begins providing personal services to a public employer on or after Jan. 7, 2013 but are not considered by the public employer to be a public employee and will not have contributions made to OPERS. This form must be completed not later than 30 days after you begin providing personal services to the public employer. **COMPLETE THIS FORM IF YOUR COMPANY EMPLOYS 5 EMPLOYEES OR LESS.**

STEP 1: Personal Information

Social Security Number

First Name

MI

Last Name

Name of Current Employer

STEP 2: Public Employment Information

Name of Public Employer for Which You Are Providing Personal Services

Employer Contact

First Name

MI

Last Name

Employer Code

Employer Contact Phone Number

Service Provided to Public Employer

Start Date of Service

Month Day Year

/ /

End Date of Service

Month Day Year

/ /

STEP 3: Acknowledgment

The public employer identified in Step 2 has identified you as an independent contractor or another classification other than a public employee. Ohio law requires that you acknowledge in writing that you have been informed that the public employer identified in Step 2 has classified you as an independent contractor or another classification other than a public employee for the services described in Step 2 and that you have been advised that contributions to OPERS will not be made on your behalf for these services.

If you disagree with the public employer's classification, you may contact OPERS to request a determination as to whether you are a public employee eligible for OPERS contributions for these services. Ohio law provides that a request for a determination must be made within five years after you begin providing personal services to the public employer, unless you are able to demonstrate through medical records to the Board's satisfaction that at the time the five-year period ended, you were physically or mentally incapacitated and unable to request a determination.

By signing this form, you are acknowledging that the public employer for whom you are providing personal services has informed you that you have been classified as an independent contractor or another classification other than a public employee and that no contributions will be remitted to OPERS for the personal services you provide to the public employer. This acknowledgment will remain valid as long as you continue to provide the same services to the same employer with no break in service regardless of whether the initial contract period is extended by any additional agreement of the parties. You also acknowledge that you understand you have the right to request a determination of your eligibility for OPERS membership if you disagree with the public employer's classification.

This form must be retained by the public employer and a copy sent to OPERS. The public employer's failure to retain this acknowledgment may extend your right to request a determination beyond the five years referenced above.

Signature _____

Do not print or type name

Date

NOTICE OF AWARD

TO: _____

Date: _____

Project Title: **BRADY SWITCH TOWER REPAIRS**

The Owner has considered the bid submitted by you on _____, 20__, for the above-described work in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your bid has been accepted in the amount of \$_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required contractor's contract bond, if applicable, and certificates of insurance within ten (10) calendar days from the date of this notice to you.

If you fail to execute said Agreement and to furnish said bond within ten (10) days from the date of this notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your bid as abandoned and as a forfeiture of you bid guaranty subject to the liability as set forth in Section 153.54 of the Ohio Revised Code. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the Owner.

Owner: Portage Park District

Name Signature Title

ACKNOWLEDGMENT OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____ on this ____ day of _____, 20__.

Name

By: _____
Name Signature Title

NOTICE TO PROCEED

TO: _____

Date: _____

Project Description: BRADY SWITCH TOWER REPAIRS

You are hereby notified to commence work in accordance with the Agreement dated _____, 20____, on or before _____, 20____, and you are to complete the work within _____ (____) consecutive calendar days thereafter. The date of completion of all work is therefore _____, 20____.

Owner: Portage Park District

Name	Signature	Title
------	-----------	-------

ACKNOWLEDGMENT OF NOTICE

Receipt of the above Notice To Proceed is hereby acknowledged by _____ on this _____ day of _____, 20____.
Name

By: _____
Name Signature Title

CHANGE ORDER

Change Order No. _____

Project: **BRADY SWITCH TOWER REPAIRS**

Date: _____

- I. The following changes are hereby made to the contract documents (attach documentation):
- II. The following change is made to the contract price:

Original contract price	\$ _____
Previous change/extras	\$ _____
This change/extra	\$ _____
Subtotal	\$ _____
Deductions	\$ _____
Net total	\$ _____

- III. The following change is made to the contract time:

The contract time will be (increased) (decreased) by ___ calendar days, making the date for completion of all work _____.

- IV. ___ There will be no claims for damages resulting from this change.

___ Claims for damages resulting from this change are anticipated for such categories as _____ and should not exceed \$ _____.

Change requested by _____ Date _____

Change recommended by _____ Date _____

Change accepted by _____ Date _____

**AFFIDAVIT OF CONTRACTOR OR SUBCONTRACTOR
FOR MINIMUM WAGES**

STATE OF _____)
)ss
COUNTY OF _____)

I, _____, _____, of the
(Affiant) (Title)

_____ do hereby certify that the wages paid
(Name of Contractor/Subcontractor)
to all employees for the full number of hours worked in connection with _____
_____ during the period from _____ to _____
(Description of Project) (Start)
_____ is in accordance with the minimum rate of wages prescribed by
(End)

the contract documents.

I further certify that no rebates or deductions from any wages due any person have been directly or indirectly made other than those provided by law.

(Signature of officer/ agent)

Sworn to before me this _____ day of _____, 20____.

Notary Public

The above affidavit must be executed and sworn to by the officer or agent or the contractor or subcontractor who supervises the payment of employees, before the owner will release the surety and/or make a final payment due under the terms of the Contract.

AFFIDAVIT OF COMPLETION

STATE OF _____)
)ss
COUNTY OF _____)

_____ being first duly sworn, deposes and says that he/she is _____ (sole owner, a partner, president, secretary, etc.) of _____ (Company Name)

The Party that entered into a contract with the PORTAGE PARK DISTRICT on the day of _____ 20__ for the construction of the Brady Switch Tower Repairs Project, and that all claims and obligations for services, labor, tools, appliances, materials, equipment, and damages to personal property and/or bodily injury arising in connection with this contract have been satisfactorily settled, and that the rate of wages paid has been in compliance with Chapter 4115 of the Ohio Revised Code.

SIGNED: _____

Sworn to and subscribed before me, a Notary Public this _____ day of _____, 20__.

Notary Public

My commission expires _____, 20__.
(SEAL)



TECHNICAL SPECIFICATIONS FOR

TOWNER'S WOODS SWITCH TOWER REPAIRS

2264 Ravenna Road, Ravenna, OH 44266

May 30, 2023



Peninsula Architects

pa-architects.com

P: 330.657.2800

E: info@pa-architects.com

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SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions after contract award.

1.3 DEFINITIONS

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

1.4 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

- k. Cost information, including a proposal of change, if any, in the Contract Sum.
- l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

1.5 QUALITY ASSURANCE

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

1.6 PROCEDURES

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 21 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Substitution request is fully documented and properly submitted.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.
 - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - f. Requested substitution is compatible with other portions of the Work.
 - g. Requested substitution has been coordinated with other portions of the Work.
 - h. Requested substitution provides specified warranty.
 - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.

- d. Requested substitution provides sustainable design characteristics that specified product provided.
- e. Substitution request is fully documented and properly submitted.
- f. Requested substitution will not adversely affect Contractor's construction schedule.
- g. Requested substitution has received necessary approvals of authorities having jurisdiction.
- h. Requested substitution is compatible with other portions of the Work.
- i. Requested substitution has been coordinated with other portions of the Work.
- j. Requested substitution provides specified warranty.
- k. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Administrative and supervisory personnel.
 - 2. Project meetings.
 - 3. Requests for Interpretation (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
- B. Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.

6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of Record Documents.

- l. Use of the premises and existing building, if applicable.
 - m. Work restrictions.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Construction waste management and recycling.
 - q. Parking availability.
 - r. Office, work, and storage areas.
 - s. Equipment deliveries and priorities.
 - t. First aid.
 - u. Security.
 - v. Progress cleaning.
 - w. Working hours.
3. Minutes: Record and distribute meeting minutes.
- C. Progress/Coordination Meetings: Conduct progress meetings as determined by Owner or Architect.
- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
 - 3. Minutes: Record and distribute meeting minutes.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI to the Architect.
1. RFIs shall originate with Contractor.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Drawing number and detail references, as appropriate.
 2. Field dimensions and conditions, as appropriate.
 3. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 4. Electronic Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. RFI Format:
1. Submit electronically via email (preferred method).
 2. Or submit hard copy through USPS, UPS, FedEx, or other method of physical delivery.
- D. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow five working days minimum for Architect's response for each RFI. RFIs received after 2:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Requests for electronic files (CAD, PDF, etc.)
 - g. Incomplete RFIs or RFIs with numerous errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within the time frame indicated in the General Conditions.
- E. On receipt of Architect's action, immediately distribute the RFI response to affected parties. Review response and notify Architect within three days if Contractor disagrees with response.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Construction schedule updating reports.
 - 3. Weekly construction reports.
 - 4. Site condition reports.
 - 5. Special reports.
- B. Related Requirements:
 - 1. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Submit electronically via email (preferred method).
 - 2. Or submit hard copy through USPS, UPS, FedEx, or other method of physical delivery.
- B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
- C. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- D. Construction Schedule Updating Reports: Submit with Applications for Payment and as required to reflect an accurate account of the construction activities.
- E. Daily Construction Reports: Submit when requested by Architect or Owner.
- F. Site Condition Reports: Submit at time of discovery of differing conditions.
- G. Special Reports: Submit at time of unusual event.

1.5 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
 - 1. Review software limitations and content and format for reports.
 - 2. Verify availability of qualified personnel needed to develop and update schedule.
 - 3. Discuss constraints, including phasing, work stages, area separations, interim milestones and partial Owner occupancy.
 - 4. Review delivery dates for Owner-furnished products.
 - 5. Review schedule for work of Owner's separate contracts.
 - 6. Review submittal requirements and procedures.
 - 7. Review time required for review of submittals and resubmittals.
 - 8. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
 - 10. Review and finalize list of construction activities to be included in schedule.
 - 11. Review procedures for updating schedule.

1.6 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice of Award to date of final completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Treat each separate area as a separate numbered activity for each main element of the Work.
- C. Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion, and the following interim milestones:
- E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
- F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 30 days of date established for commencement of the Work. Base schedule on the startup construction schedule and additional information received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.3 REPORTS

- A. Weekly Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Equipment at Project site.
 4. Material deliveries.
 5. Accidents.
 6. Meetings and significant decisions.
 7. Unusual events (see special reports).
 8. Stoppages, delays, shortages, and losses.
 9. Emergency procedures.
 10. Orders and requests of authorities having jurisdiction.
 11. Change Orders and Construction Change Directives received and implemented.
 12. Services connected and disconnected.
 13. Equipment or system tests and startups.
 14. Partial completions and occupancies.
 15. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE

- A. Schedule Preparation
1. Monthly schedule updates will be prepared by the Project Coordinator. Contractors are to update their individual schedules as indicated and cooperate with all other contractors in the preparation of the comprehensive project schedule prepared by the Project Coordinator.
- B. Schedule Coordination
1. The Contractor, immediately after being awarded the Contract, shall prepare Construction Schedule for his Work, which shall provide for expeditious and practicable execution of the Work in accordance with the indicated project timeframe. The comprehensive construction schedule approved by all Contractors, shall be submitted within 15 days from date of commencement.
 2. Each Contractor agrees to work with the Project Coordinator to finalize the comprehensive Construction Schedule and agree that the judgments made by the Project Coordinator are in the best interest of the Project and will not be cause for additional compensation. The completion timeframe shall be per the indicated project timeframe.

3. Each Contractor shall adhere to the comprehensive Construction Schedule and shall carry on the Work promptly and efficiently without delaying other portions of Work. If necessary, to facilitate the overall schedule, certain parts of the Work shall be performed in preference to others.
4. If the Contractor falls behind schedule with Work, the Contractor shall, at his own expense, work such overtime or take other corrective action as may be necessary to get back on schedule and to complete the Work. Any resulting costs or damages are the responsibility of the Contractor causing the delay.

END OF SECTION

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 5. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 DEFINITIONS

- A. Submittals: Written and graphic information and physical samples that require responsive action. Submittals may be rejected for not complying with requirements.
- B. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and, if applicable Construction Manager and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.

- c. Submittal category: Action; informational.
- d. Name of subcontractor.
- e. Description of the Work covered.
- f. Scheduled date for Architect's final release or approval.
- g. Scheduled date of fabrication, purchasing, and/or installation.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
 - 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently. Do not submit partial submittals.
 - 3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 10 business days for review of each resubmittal.
 - 4. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 business days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
 - 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 - 2. Name file with submittal number or other unique identifier, including revision identifier.
 - 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect and, if applicable Construction Manager.
 - 4. Transmittal Form for Electronic Submittals: Attach submittal in PDF format, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Names of subcontractor, manufacturer, and supplier.

- h. Category and type of submittal.
 - i. Submittal purpose and description.
 - j. Specification Section number and title.
 - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - l. Drawing number and detail references, as appropriate.
 - m. Location(s) where product is to be installed, as appropriate.
 - n. Related physical samples submitted directly.
 - o. Indication of full or partial submittal.
 - p. Remarks.
5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
- a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.
 - d. Product name.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and, if applicable Construction Manager on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's and, if applicable Construction Manager's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's and, if applicable Construction Manager's or Contractor's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
- 1. Submit electronic submittals as PDF electronic files via email.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Assemble and submit submittals required by individual Specification Sections into single packages incorporating all submittal requirements of the individual Specification Section. Do not submit individual items required by the Specification section as separate transmittals. Where possible, submit related items of Work required by the individual Sections concurrently to allow for concurrent review.
 - a. Submittal Submissions shall comply with the following:
 - 1) All product data, install instructions, etc. information shall be the manufacturer's current most current information.

- 2) All information must be clear and legible. PDF's downloaded directly from the manufacturer's website are preferred.
 - 3) All information shall be highlighted, checked, circled, marked, or identified in some way for the reviewer to easily determine which product, options, accessories, etc. are being proposed by the contractor.
 - 4) All questions regarding a submittal item (i.e. – shop drawings, etc.) shall be “clouded” for the reviewer to address and respond as a part of the submittal review comments.
 - 5) Any deviations from the contract documents (i.e. – dimensional changes, etc.) shall be “clouded” for the reviewer to address and respond as a part of the submittal review comments.
 - 6) Product or system specific “Shop Drawings” shall be prepared by the contractor or supplier shall be generated via a software specific to their trade. Photo copies of the Construction Documents with notes added will not be accepted.
 - 7) All product submittals shall be from a manufacturer specified in the Contract Documents for each product. Submittals from a manufacturer not specified will be rejected and returned for resubmission.
 - a) If a Contractor wishes to submit a product substitution, they may do so by contacting and completing the substitution request form provided by the Architect.
 - 8) All product submittals shall include any corresponding equipment, device, system, etc. tags indicated in the contract documents for each product submitted (i.e.: “PL-1”, “RB-1”, “WC-1”, “TMV-1”, “PRV-1”, “RP-x-x”, “VVB-x-x”, Light Fixture Identifier, Electrical Panel Tags, etc.).
 - 9) All project submittals that are electrified or require control wiring between components (i.e.: door hardware, med gas systems, etc.) must include complete, project specific wiring diagrams for these electrified products.
 - 10) All product submittals shall also contain the manufacturer's installation instructions.
 - 11) All “physical” samples and finish color selection submittals shall also be submitted electronically. Email photo or photos of the products being submitted. The “physical” sample or finish color selection submittal shall then be delivered concurrently to the Architect for review. Color samples will not be selected from an electronic reproduction or color chart.
3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

2.2 SUBMITTALS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.

- d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
5. Submit Product Data before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 - h. Include graphic scale on all drawings.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. Provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

- D. **Product Schedule:** As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
- E. **Qualification Data:** Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. **Welding Certificates:** Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- G. **Installer Certificates:** Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- H. **Manufacturer Certificates:** Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- I. **Product Certificates:** Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- J. **Material Certificates:** Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- K. **Material Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- L. **Product Test Reports:** Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- M. **Research Reports:** Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
 2. Date of evaluation.
 3. Time period when report is in effect.
 4. Product and manufacturers' names.
 5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- N. **Preconstruction Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- O. **Compatibility Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation

of product. Include written recommendations for primers and substrate preparation needed for adhesion.

- P. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Q. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.3 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal and will mark stamp appropriately to indicate action.
- B. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- C. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. "Statement of Special Inspections" for test and inspections required by Ohio Building Code and procured by the Owner.
 - 2. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 CONFLICTING REQUIREMENTS

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

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.7 QUALITY CONTROL

- A. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

- a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- C. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. **Testing Agency Responsibilities:** Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Project Coordinator.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- E. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. **Coordination:** Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- G. **Schedule of Tests and Inspections:** Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
1. **Distribution:** Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.4 PROJECT CONDITIONS

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

1.5 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

1.6 MATERIALS

- A. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- B. Floor Surface Protection Material: Provide Barriclad 2.2 material or an alternative product approved by Architect.
- C. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

1.7 CONSTRUCTION PERSONNEL PARKING AREAS

- A. Provide temporary parking area for use by construction personnel as indicated on Drawings or if not indicated, sized to accommodate project requirements.

1.8 WASTE DISPOSAL FACILITIES (DUMPSTERS)

- A. Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."
 - 1. When included, comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
 - 2. Waste Disposal Facilities shall be provided for the Work of all Contracts.

1.9 COMMON-USE FIELD OFFICE

- A. Provide temporary common-use field office of sufficient size to accommodate the needs of Owner, Architect, and Project Coordinator's office activities and to host Project meetings specified in other Division 01 Sections. Office shall be kept clean and orderly.
 - 1. All fees, permits, rental charges, utility company equipment and connection charges, usage charges, etc. are to be paid by the Contract responsible for providing the common-use field office.
 - 2. Provide electrical service connection to common-use field office. Include all required transformers and panels as required.
 - 3. Provide temporary telephone/facsimile services and equipment in common-use field office for use by the Owner, Architect and Project Coordinator.
 - 4. Provide Cable or DSL internet service and routing equipment (provide a minimum of three wired access points) in common-use field office for use by the Owner, Architect and Project Coordinator.
 - 5. Other Contracts requiring the use of a field office shall provide this office at their own expense.

1.10 STORAGE AND FABRICATION FACILITIES

- A. Provide sheds sized, furnished, and equipped to accommodate long term storage of materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.

1.11 FIRE EXTINGUISHERS

- A. Provide portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

1.12 PROJECT SIGNS

- A. Temporary Signs: Provide signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - 1. Provide temporary, directional signs for construction personnel and visitors.
- B. Maintain and touchup signs so they are legible at all times.
- C. Unauthorized signs are not permitted.

1.13 ELECTRIC POWER - USE OF EXISTING POWER

- A. Use of Owner's existing electric power service will be permitted. Provide connections and extensions of services as required for construction operations. Clean and maintain electric power service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Usage Charges to be paid by the Owner.
 - 2. Provide temporary power stands or pedestals for use by all Contracts. Stands shall have multiple 110v-120v outlets and circuits. Each Contract requiring power greater than 110v-120v power shall provide this at their own expense.
 - 3. Coordinate with the Owner prior to the commencement of work, regarding which existing panels and circuits are to be used for temporary power and lighting.

1.14 TEMPORARY ELECTRIC POWER

- A. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. All fees, permits, connection charges, utility company equipment, usage charges, etc. are to be paid by the Contract responsible for providing the temporary electric power service.

1.15 TEMPORARY LIGHTING

- A. Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 - 2. In existing facilities where the construction activities may occur over a series of phases, temporarily relocate directional egress signage and lighting to direct building occupants and construction personnel away from hazards or dead-end pathways created by the construction activities. Coordinate the temporary relocation of egress signage with the authority having jurisdiction.

1.16 WATER SERVICE – USE OF EXISTING WATER SERVICE

- A. Use of the Owner's existing domestic water service will be permitted. Provide connections and extensions of services as required for construction operations. Clean and maintain water service in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Usage Charges to be paid by the Owner.
 - 2. Each contract is responsible for its own hoses, nozzles, etc.

1.17 TEMPORARY WATER SERVICE

- A. Install water service and distribution piping in sizes and pressures adequate for construction.
 - 1. All fees, permits, connection charges, utility company equipment, usage charges, etc. are to be paid by the Contract responsible for providing the temporary water service.

1.18 TEMPORARY PORTABLE SANITARY FACILITIES

- A. Provide temporary/portable toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1.19 TEMPORARY BUILDING ENCLOSURES

- A. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

1.20 PROTECTION OF FINISHES

- A. Provide surface protection material to protect existing and new flooring, walls, ceiling, etc. surfaces.
 - 1. The Project Coordinator shall be responsible for the protection of all floor finishes installed as new construction, as it pertains to this project.
 - 2. Each Contract shall be responsible for the protection of all finishes, unless noted otherwise. Finishes may include but not be limited to: existing flooring and new/existing (walls, ceilings, countertops, furniture, equipment, etc.).

1.21 TEMPORARY HEATING PRIOR TO BUILDING ENCLOSURE

- A. Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
 - 3. All fees, permits, connection charges, delivery and/or usage charges, etc. are to be paid by the Contract responsible for providing the temporary heating services.

1.22 VENTILATION AND HUMIDITY CONTROL PRIOR TO BUILDING ENCLOSURE

- A. Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
 - 1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.

1.23 HEATING, COOLING AND VENTILATION AFTER BUILDING ENCLOSURE

- A. Heating
 - 1. Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 - 2. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

- a. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - b. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.
 - B. Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
 - 1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
- 1.24 SECURITY ENCLOSURE AND LOCKUP
- A. It is the Contractor's responsibility to secure their facilities, equipment, and materials. Coordinate access control of the site with the Owner.
- 1.25 BARRICADES, WARNING SIGNS AND LIGHTS
- A. Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- 1.26 LIFTS AND HOISTS
- A. Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- 1.27 PROTECTION OF EXISTING FACILITIES
- A. Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
 - B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- 1.28 TEMPORARY ROADS AND PAVED AREAS
- A. Construct and maintain temporary roads and paved areas adequate for construction operations.
 - 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
 - 2. Provide road and paved area street sweeping.
- 1.29 TRAFFIC CONTROLS
- A. Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

1.30 DEWATERING FACILITIES AND DRAINS

- A. Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.

1.31 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings.
1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

1.32 STORMWATER CONTROL

- A. Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

1.33 TREE AND PLANT PROTECTION

- A. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

1.34 PEST CONTROL

- A. Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

1.35 OPERATION, TERMINATION, AND REMOVAL OF TEMPORARY FACILITIES

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. 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.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

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

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements.
 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Provide custom color or finish if required.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches. Provide custom color or finish if required.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.
 2. No additional compensation will be owed to the Contractor for matching Architect's sample.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 1. Construction layout.
 2. Field engineering and surveying.
 3. Installation of the work.
 4. Coordination of Owner-installed products.
 5. Progress cleaning.
 6. Starting and adjusting.
 7. Protection of installed construction.
 8. Correction of the Work.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities, and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Examination and Acceptance of Conditions: Before proceeding with each component of the work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for

compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.
 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 2. Do not scale Drawings to obtain required dimensions.
 3. Inform installers of lines and levels to which they must comply.
 4. Check the location, level and plumb, of every major element as the Work progresses.
 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification: Identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of three permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

- E. Sequence the work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Anchors and Fasteners: Provide blocking and attachment plates and anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.

- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Daily cleaning, including broom cleaning and mopping, of the overall Project Area (including construction egress pathways, stairwells, site staging areas, dumpster staging areas, etc.) is the responsibility of the Project Coordinator. Cleaning required in a specific area of the Project resulting from concentrated effort by a particular trade is the responsibility of that trade.
- E. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- F. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- G. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."
- E. Refer to Mechanical, Electrical and Plumbing specification sections for additional requirements.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

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

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: Administrative and procedural requirements for construction waste management activities.
 - 1. Salvaging non-hazardous demolition and construction waste.
 - 2. Recycling non-hazardous demolition and construction waste.
 - 3. Disposing of non-hazardous demolition and construction waste.
- B. Related Sections include the following:
 - 1. Division 01 "Temporary Facilities and Controls".

1.3 DEFINITIONS

- A. Construction and Demolition Waste (CDW): Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair and demolition. Includes material that is recycled, reused, salvaged or disposed as garbage.
- B. Disposal: Removal off-site of CDW and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- C. Diversion: Avoidance of CDW to landfill or incineration. Diversion does not include using materials for landfill, alternate daily cover on landfills, or materials used as fuel in waste-to-energy processes.
- D. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosiveness, toxicity or reactivity.
- E. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- F. Trash: Any product or material unable to be reused, returned, recycled or salvaged.
- G. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable and reusable material.
- H. Material Stream: A flow of materials coming from a job site into markets for building materials. A material stream should constitute at least 5%, by weight or volume, of total diverted materials. Examples of material streams include deconstructed materials sent to reuse markets, commingled waste sent to a mixed-waste recycling facility, source separation where each material is sent to a specific facility, manufacturers' or suppliers' take-back of materials, and reuse of deconstructed materials on-site.
- I. Salvage: Recovery of materials for on-site reuse or donation to a third party.

- J. Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. Examples include, but are not limited to the following: Grinding of concrete for use as subbase material.
- K. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- L. Recycling: The process of sorting, cleaning, treating and reconstituting materials for the purpose of using the material in the manufacture of a new product.
- M. Source-Separated CDW Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.
- N. Co-mingled CDW Recycling: The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.
- O. Approved Recycling Facility: Any of the following:
 - 1. A facility that can legally accept CDW materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
 - 2. Material Recovery Facility: A general term used to describe a waste-sorting facility. Mechanical, hand-separation, or a combination of both procedures, are used to recover recyclable materials.

1.4 SUBMITTALS

- A. Construction Waste Management Plan: Submit plan electronically within 21 days of date established for the Notice to Proceed and prior to the generation of any waste.
- B. Waste Management Report: Concurrent with each Application for Payment, submit electronic copy of the report.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Conduct construction waste management activities in accordance with State of Ohio requirements and all other applicable laws and ordinances.
- B. Pre-construction Waste Management Conference: Schedule and conduct meeting at Project site prior to construction activities.
 - 1. Attendees: Inform the following individuals, whose presence is required, of date and time of meeting.
 - a. Owner.
 - b. Contractor's superintendent.
 - c. Major subcontractors.
 - d. Other concerned parties.
 - 2. Agenda Items: Review methods and procedures related to waste management including, but not limited to the following:
 - a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - b. Review requirements for documenting quantities of each type of waste and its disposition.
 - c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

- d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - e. Review waste management requirements for each trade.
3. Minutes: Record discussion. Distribute meeting minutes to all participants within three (3) days.

C. Implementation: Designate an on-site party responsible for instructing workers and implementing the Construction Waste Management Plan. Distribute copies of the Construction Waste Management Plan to the job site foreman's for each prime contractor and each subcontractor. Include waste management and recycling in worker orientation. Provide on-site instruction on appropriate separation, handling, recycling, and salvaging methods to be used by all parties at the appropriate stages of the work at the site. Include waste management and recycling discussions in pre-fabrication meeting with subcontractors and fabricators. Also include discussion of waste management and recycling in regular job meetings and job safety meetings conducted during the course of work at the site.

1.6 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste types, quantity by volume, material streams, methods of disposal, handling and transportation procedures. Include separate sections in plan for demolition and construction waste.
- B. Organize the waste management plan with the following information:
1. Types and estimated quantities, by volume (tonnage), of CDW expected to be generated during demolition and construction.
 2. Identify specific material streams to be utilized.
 3. Proposed methods for CDW salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:
 - a. Contracting with a deconstruction specialist to salvage materials generated.
 - b. Selective salvage as part of demolition contractor's work.
 - c. Reuse of materials on-site or sale or donation to a third party.
 4. Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:
 - a. Requiring subcontractors to take their CDW to a recycling facility.
 - b. Contracting with a recycling hauler to haul recyclable CDW to an approved recycling or material recovery facility.
 - c. Processing and reusing materials on-site.
 - d. Self-hauling to a recycling or material recovery facility.
 5. Name of recycling or material recovery facility receiving the CDW.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

1.7 WASTE MANAGEMENT RESOURCES

- A. General information contacts regarding construction and demolition waste include but not limited to:
1. EPA Construction and Demolition (C&D) debris website:
<http://www.epa.gov/apaoswer/non-hw/debris-new/bytype.htm>
 2. Construction Materials Recycling Association:
<http://www.cdrecycling.org>
 3. Construction Industry Compliance Assistance Center:
<http://www.cicacenter.org>

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT GENERAL

- A. Provide containers for CDW that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.
- B. The collection containers for recyclable CDW must contain no non-recyclable materials.
- C. Provide containers for CDW that is disposed in a landfill clearly labeled as such.
- D. Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.
- E. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.
- F. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.
- G. Do not pulverize materials prior to placing in containers.

3.2 CO-MINGLED RECYCLING

- A. General: Do not put CDW that will be disposed in a landfill into a co-mingled CDW recycling container.

3.3 REMOVAL OF CONSTRUCTION WASTE MATERIALS

- A. Remove CDW materials from project site on a regular basis. Do not allow CDW to accumulate on-site.
- B. Transport CDW materials off Owner's property and legally dispose of them.
- C. Burning of CDW is not permitted.

END OF SECTION

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 1. Substantial Completion procedures.
 2. Final completion procedures.
 3. Warranties.
 4. Final cleaning.
 5. Extra materials schedule.
- B. Related Requirements:
 1. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 2. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 3. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
 4. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBMITTALS

- A. Refer to body of section for required submittals.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - a. Refer to extra materials list at end of Section. Submit copy of extra materials schedule endorsed and dated by the Owner.
 5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
 6. Advise Owner of changeover in heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list). Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report if applicable.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.6 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Prior to request for substantial completion inspection.
 1. Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

PART 2 - PRODUCTS

6.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

6.2 EXTRA MATERIALS

- A. Furnish extra materials, tools, spare parts and similar items identified in Divisions 02 through 49 Sections and/or Extra Materials Schedule located in Part 3 of this Section.
- B. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- C. Extra materials shall be from the same production run and/or batch mix as installed items.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - j. Remove labels that are not permanent.
 - k. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - p. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Division 01 Section "Temporary Facilities and Controls." Prepare written report.

3.2 ATTACHMENTS

- A. Extra Material Schedule: Complete and submit attached extra material schedule.
- B. Contractor Substantial Completion Checklist: Complete and submit attached Contractor Substantial Completion Checklist form with request for substantial completion inspection.

CONTRACTOR SUBSTANTIAL COMPLETION CHECKLIST

Project No. _____ Project Name _____

Contract Type _____ Contractor _____

Applicable items listed must be complete prior to request for substantial completion inspection.

Description	Date Completed or Transmitted to Owner / Architect if Applicable	Owner Acknowledgement
Certificates of Release		
Life Safety Inspection/Occupancy Certificate		
As Built Documents		
Operating / Maintenance Manuals		
Warranties		
Maintenance Bonds		
Maintenance Service Agreements		
Extra Materials, Tools, Spare Parts		
Instructed Owner's Personnel in Operation of Equipment		
Returned Owner's Keys		
Contractor's Punch List		

END OF SECTION

SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 1. Operation and maintenance documentation directory.
 2. Emergency manuals.
 3. Operation manuals for systems, subsystems, and equipment.
 4. Product maintenance manuals.
 5. Systems and equipment maintenance manuals.
- B. Related Requirements:
 1. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 2. Divisions 02 through 33 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 1. Architect, Consulting Engineers and, when applicable, the Commissioning Authority will comment on whether content of operations and maintenance submittals are acceptable.
 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
- C. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 30 days before commencing demonstration and training. Architect and when applicable Commissioning Authority will return copy with comments, if required.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 10 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.
- D. Submittal Procedures: Submit Operation and Maintenance Data related to mechanical, plumbing and electrical systems directly to applicable consulting engineer with transmittal to Architect.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
1. List of documents.
 2. List of systems.
 3. List of equipment.
 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
 2. Table of contents.
 3. Manual contents.
- B. Title Page: Include the following information:
1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager.
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.

- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.
 - 5. Power failure.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 - 1. Instructions on stopping.
 - 2. Shutdown instructions for each type of emergency.
 - 3. Operating instructions for conditions outside normal operating limits.
 - 4. Required sequences for electric or electronic systems.
 - 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor has delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.

8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 1. Standard maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared record Drawings in Division 01 Section "Project Record Documents."
- F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Product Data.
- B. Related Requirements:
 - 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
 - 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 3. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up record prints.
- B. Record Product Data: Submit one paper copy and annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding archive photographic documentation.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.

- c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

2.2 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, record Specifications and record Drawings where applicable.
- B. Format: Submit record Product Data as paper copy and scanned PDF electronic file(s) of marked-up paper copy of Product Data.
 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION

SECTION 01 79 00 – DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training videotapes.
- B. Related Sections include the following:
 - 1. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
 - 1. Inspect and discuss locations and other facilities required for instruction.
 - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 - 3. Review required content of instruction.
 - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.4 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 - 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
 - 5. Adjustments: Include the following:
 - a. Alignments.

- b. Checking adjustments.
- c. Noise and vibration adjustments.
- d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner, with at least fourteen days' advance notice.
- C. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.
- D. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Selective demolition as designated or required to provide for new Work. Refer to Drawings for additional demolition notes. Work includes, but is not necessarily limited to, the following:
 - 1. Selective demolition of designated construction.
 - 2. Removal of designated materials and finishes.
 - 3. Protection of items to remain as indicated on Drawings.
 - 4. Removal of demolished materials from site.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or recycled.
- B. Remove and Salvage: Detach items from existing construction for reuse and reinstallation.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or recycled.

1.3 REFERENCE STANDARDS

- A. American National Standards Institute
 - 1. ANSI A10.6 - American National Standard Safety Requirements for Demolition.

1.4 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. Perform Work in accordance with rules and regulations of state and local agencies having jurisdiction for demolition of structures, safety of adjacent structures, dust control, runoff control, and disposal of debris.
 - 2. Conform to rules and regulations of state and local agencies having jurisdiction when hazardous or contaminated materials are discovered.

1.5 SITE CONDITIONS

- A. Conduct demolition and debris removal operations to minimize interference with adjacent roads, streets, walks, and other adjacent occupied and used facilities.
- B. Cease demolition immediately if structures appear to be in danger. Notify Owner's Representative. Do not resume operations until directed.
- C. Where existing conditions conflict with representations of the Contract Documents, notify Architect and obtain clarification. Do not perform work affecting the conflicting conditions until clarification of the conflict is received.
- D. Hazardous Materials:
 - 1. It is not expected that hazardous materials will be encountered in the Work.

2. Immediately inform Owner's Representative if hazardous materials are encountered or suspected and stop work in suspect area. Do not proceed with work in suspected area until approved by Owner's Representative.

PART 2 EXECUTION

2.1 EXAMINATION

- A. Determine where removals may result in structural deficiency or unplanned building collapse during demolition. Coordinate demolition sequence and procedures to prevent structures from becoming unstable.
- B. When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to the Owner.

2.2 PREPARATION

- A. Lay out work to be demolished at job site and coordinate with related work for which cutting is required.
- B. Erect and maintain weatherproof closures for exterior openings
- C. Protect existing improvements indicated to remain from damage during demolition.
- D. Locate, identify, and protect known utilities indicated to remain from damage. Should damage occur, notify Owner's Representative and repair at no additional cost to the Contract.

2.3 DEMOLITION

- A. Disposition of Existing Improvements:
 1. Materials forming portions of permanent structure designated for demolition shall become Contractor's property, and Contractor shall be responsible for their removal unless otherwise noted.
 2. Personal property and movable items remain Owner's property. Contractor to store items in future storage area and protect from damage.
- B. Perform work in accordance with ANSI A10.6 unless otherwise noted.
- C. Cease operations immediately when structure appears to be in danger and notify Owner's Representative.
- D. Perform demolitions as much as possible with small tools. Demolish in small sections.
- E. Demolish in an orderly and careful manner. Protect existing supporting structural members.
- F. Concrete:
 1. Demolish by means of saw cutting, drilling, chipping, breaking, or a combination thereof, as indicated or required to satisfactorily accomplish the Work without damage to existing improvements not being removed.
 2. Demolish concrete and masonry in small sections, less than 3 feet in any direction.
- G. At concrete and other materials where edges of cuts and holes will remain exposed in the completed work, make cuts using power sawing and coring equipment. Do not over cut at corners of cut openings.

2.4 CUTTING

- A. Cutting of concrete and asphalt shall be made clean and neat.
- B. At limits of demolition Work shown or specified, provide neat, orderly, and clean joints, lines, and edges of surfaces, whether for junctions with new materials or surfaces or whether to be left as existing. Where demolitions methods or controls may not permit the intended jointure, submit conditions and alternatives to University's Representative, and obtain resolutions prior to commencing.
- C. Cutting of concrete and asphalt shall be made clean and neat.
- D. Do not cut or alter structural members unless indicated to do so on the Drawings or written approval is received from University's Representative.
- E. Take care not to damage reinforcing or structural steel scheduled to remain in place.

2.5 REMOVAL OF DEBRIS

- A. Remove demolished materials from site except where specifically noted otherwise.
- B. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
- C. Remove salvage and debris as they accumulate. Do not permit presence of debris to delay progress of related work.
- D. Remove materials in a manner to prevent spillage.
- E. Nothing to be removed from site shall be stored, sold, burned, or buried on site.

2.6 REPAIRS

- A. Promptly repair damage to adjacent construction caused by demolition operations.
- B. Where repairs to existing surfaces are required, patch to restore surface to original or better condition.
- C. Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

2.7 CLEANING

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

END OF SECTION

SECTION 03 01 30 - PATCHING OF CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section includes:
 - 1. Concrete Delamination Repairs - Removal of deteriorated concrete and subsequent patching and rebuilding.
- C. Unit Prices:
 - 1. Use the Bid Form to provide Unit Prices for each of the following items. Include labor, material, equipment costs, and the like necessary to install, complete and in place, the Work described by each of the following items and this Section.
 - a. Unit Price – concrete delamination repair (per square foot).
 - b. Unit Price – rebar replacement (per pound).
 - 2. Payment:
 - a. The Contractor's repair area quantities will be verified after preparation – but prior to the placement of repair materials.
 - b. Payment for repairs will be considered upon completion of the Work.

1.2 REFERENCES

- A. Reference Standards:
 - 1. American Concrete Institute (ACI):
 - a. Standard Specifications for Structural Concrete (ACI 301-05).
 - b. Cold Weather Concreting (ACI 306R-88 [Reapproved 2002]).
 - 2. ASTM International:
 - a. Standard Specification for Concrete Aggregates (ASTM C-33-03).
 - b. Standard Specification for Portland Cement (ASTM C-150-05).
 - c. Standard Specification for Chemical Admixtures for Concrete (ASTM C-494-05a).
 - d. Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear (ASTM C-882-05).
 - e. Standard Practice for Measuring Delaminations in Concrete Bridge Decks by Sounding (ASTM D-4580-03).
 - 3. Concrete Reinforcing Steel Institute (CRSI): Standard Specifications.
 - 4. International Concrete Repair Institute (ICRI): Printed guidelines for the repair of deteriorated concrete resulting from oxidation of reinforcing steel.

1.3 SUBMITTALS

- A. Certificates: The Repair Materials Manufacturer's Certificate of Compliance.

- B. Manufacturers' Instructions: Installation instructions.
- C. Product Data: Include material descriptions, chemical composition, physical properties, test data, and mixing and application instructions.
- D. 1. Include Material Safety Data Sheets, if applicable

1.4 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Repair Materials Manufacturer: A company specializing in type of materials specified, with no less than ten years of documented experience similar to the Work specified.
 - 2. Applicator: A contractor with no less than ten years of documented experience similar to the Work specified. The Contractor shall be approved or certified by the respective Repair Materials Manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver the specified products in original, unopened containers with the respective Repair Materials Manufacturer's names, labels, and identification intact.
- B. Comply with the respective Repair Materials Manufacturer's instructions for storage, shelf life, and handling.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements: Place repair materials within the temperature and weather limitations given by the respective Repair Materials Manufacturer.

1.7 QUANTIFYING REPAIRS

- A. Provide anticipated work schedule to the Owner prior to commencement of operations. Schedule work to minimize inconvenience to the Owner.
 - 1. After Examination (prior to removal operations): Verify quantity of repairs with the Owners representative in each section before proceeding to other sections. The Owners representative will review and approve the Contractor's outline of repair areas prior to commencement of removal operations.
 - 2. After Preparation (prior to the placement of repair materials): Verify quantity of repairs with the Owners representative in each section before proceeding to other sections.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. BASF Building Systems, BASF Construction Chemicals Americas, BASF Aktiengesellschaft, Shakopee, MN (Website: www.chemrex.com, Voice: 800.433.9517).
- B. The Euclid Chemical Company (EUCO), Cleveland, OH. (Website: www.euclidchemical.com, Voice 800.321.7628).
- C. Sika Corporation (USA), Lyndhurst, NJ (Website: www.sikausa.com, Voice: 800.933.7453).
- D. MAPEI Corporation, Deerfield Beach, FL (Website: www.MAPEI.com Voice: 1-800-992-6273

E. ChemMasters, Madison, OH (Website: www.chemmasters.net Voice: 440-428-2105)

2.2 MATERIALS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to the following:

1. Epoxy Bonding Agent.

- a. MAPEI Planibond EBA
- b. BASF Corporation; MasterEmaco ADH 326
- c. Sika Corporation; SIKADUR 32 Hi Mod or Sikadur 32 Hi Mod LPL
- d. Euclid Chemical Company; EUCO #452
- e. ChemMasters: Duraguard 100HM

2. Cementitious Epoxy Bonding Agent & Anti-Corrosion Coating.

- a. MAPEI Corporation Planibond 3C or MAPEFER 1K for rebar only
- b. BASF Corporation; MasterEmaco P124
- c. Sika Corporation; Sika Armatec 110
- d. Euclid Chemical Company; DUALPREP AC
- e. ChemMasters: Polyweld EPXci

3. Cementitious Patching Mortar Vertical / Overhead – (Limited to Area Less Than 5 SF).

- a. MAPEI Corporation, Planitop X/XS, Planitop 23, Planitop 12SR
- b. BASF Corporation; MasterEmaco S 488 CI
- c. Sika Corporation; SikaQuick VOH, Sikarepair 224 or Sikatop 123 plus
- d. Euclid Chemical Company; Tamms Structural Mortar
- e. ChemMasters: Chempatch VO1 or Chempatch Fast VO

4. Cementitious Patching Mortar - Form and Pour/Pump

- a. MAPEI Corporation Planitop 15, Planitop 11SCC
- b. BASF Corporation; MasterEmaco S 466CI or S 477CI
- c. Sika Corporation; Sika Monotop 611, SikaQuick FNP, Sikacrete 100 CI, Sikacrete 211 SCC Plus
- d. Euclid Chemical Company; Tamms Form and Pour Concrete
- e. ChemMasters: Chempatch Form & Pour

5. Cementitious Patching Mortar, Rapid Setting

- a. MAPEI Corporation, Planitop 18, Planitop 18ES, Planitop 18TG
- b. BASF Corporation; MasterEmaco T 415 OR T 430
- c. Sika Corporation; SikaQuick 1000 or SikaQuick 2500
- d. Euclid Chemical Company; EUCO-SPEED
- e. ChemMasters: Chemspeed 75 or Chemspeed 75ES

6. Bonding Agent: Slurry coat of batch material mixed to a slightly wetter consistency, per the Repair Materials Manufacturer's recommendations.

2.3 EQUIPMENT

A. Chipping Hammers (if used): 25-pound class.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine and verify repair areas with the Engineer per Section 1.8 above.
- B. Inspect all concrete surfaces within project limits, using a hammer, sounding rod, chaindrag or other similar method approved by the Owners representative for locating deteriorated concrete. Sounding shall be done in accordance with ASTM D-4580-03.
- C. Provide equipment as necessary to inspect the surfaces within the scope of the Work completely.
- D. Using the Contractor's own aerosol spray paint, outline areas of loose, unsound, or delaminated concrete for removal.

3.2 PREPARATION

- A. Temporary Protection and Shoring:
 - 1. Provide necessary scaffolding and falsework. Be responsible for strength, safety, and compliance regulations regarding scaffolding and falsework, and other supports.
 - 2. Supply necessary supports and shoring. Support insecure portions of concrete construction adjacent to the work area. Brace and support concrete work until adequate strength is attained. Be responsible for the strength and stability of the structure.
 - 3. Provide shields, barriers, and coverings necessary to protect the building occupants and to prevent interference with the safe use of the structure by the occupants.
- B. Dust Control: Isolate dust and debris to area of construction. Provide shields and barriers necessary to keep vehicles, and occupied and public areas free of deleterious materials and dust.
- C. Surface Preparation:
 - 1. Prepare per the International Concrete Repair Institute (ICRI) guidelines.
 - 2. Remove loose, unsound, or delaminated concrete by hydro-demolition or mechanical means. Remove concrete in a manner that prevents damaging reinforcing steel and sound concrete.
 - a. Operate chipping hammers at an angle of less than 45 degrees with respect to the surface.
 - 3. Once initial removals are made, proceed with undercutting exposed corroded reinforcing bars, as indicated on the Drawings.
 - a. Provide 3/4 inch minimum clearance between exposed reinforcing and surrounding concrete – or 1/4 inch larger than largest aggregate in repair mortar – whichever is greater.
 - b. Extend concrete removals along the bars to locations along the bar that are free of bond-inhibiting corrosion, and where the bar is well bonded to surrounding concrete.
 - c. If un-oxidized reinforcing steel is exposed during the undercutting process, take care not to damage the bar's bond to surrounding concrete. If bond between bar and concrete is broken, undercutting of the bar will be required.
 - 4. Secure loose reinforcement in place by tying to other secured bars or by other approved methods.

5. If reinforcing has lost more than 25-percent cross section (20-percent if two or more consecutive parallel bars are affected), repair the reinforcing by complete bar replacement or addition of supplemental bar of proper bar size and length. Include required bar replacement in the Contractor's Base Bid and Unit Price costs. See typical repair and cleaning of reinforcing steel details on S-301 for more info
6. Make removal edges using 1/2 inch maximum depth sawcut or right angle break. The presence of feathered edges will be grounds for rejection of the installation. Keep patch configuration rectangular and as simple as possible.
7. After removals are complete, roughen sawcut surfaces and remove bond-inhibiting materials (dirt, concrete slurry, loosely bonded aggregates and heavy corrosion on reinforcing steel) by abrasive-blasting – or high pressure water-blasting with or without abrasives. Check surface after cleaning to be sure it is free of additional loose aggregate, or that additional delaminations are not present.
8. Prevent contamination of the repair surface. If hydro-demolition is used, remove cement and particulate slurry from the prepared surface before slurry hardens.
9. Use care to avoid damaging sound concrete. The Contractor shall bear the cost of additional repairs caused by the actions of the Contractor.

3.3 REPAIR MATERIAL MIXING

- A. Add admixtures to the entire fresh pre-mixed batch or truckload of concrete at the Site prior to placement, as recommended by the Admixture Manufacturer.
- B. Mix manufactured repair products per the respective Repair Materials Manufacturer's printed instructions.

3.4 PLACEMENT

- A. Apply bonding agent to surface of concrete per the respective Repair Materials Manufacturer's printed instructions. Apply only enough bonding agent as can be covered by the repair material before it dries.
- B. Immediately following application of bonding agent, place patching concrete. Consolidate patch materials, then screed and allow to set. Apply ample pressure to repair material when troweling to ensure intimate contact with the substrate and to eliminate voids behind reinforcing steel.
- C. Patch areas shall receive a finish to match adjacent areas.
- D. Do not exceed the maximum lift thickness as noted by the respective Repair Materials Manufacturer. Apply additional lifts as required to achieve full depth thickness of patch. Follow the respective Repair Materials Manufacturer's recommendations for preparing the surface of preceding layers of repair materials.

3.5 REPAIR OF SURFACE DEFECTS

- A. Allow the Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Modify or replace concrete not conforming to required lines, detail, and elevations.
- C. Repair or replace concrete not properly placed resulting in honeycombing and other defects.

END OF SECTION

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. This section includes all concrete topping slabs.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: 5000 PSI, Air Entrained Mix w/ Synthetic Fibers to be used for all Structural Concrete.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement.

1.3 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Material certificates.
- C. Material test reports.
- D. Floor surface flatness and levelness measurements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent owner selected testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
 - 1. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length.
- B. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I or Type III, gray. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F or C.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.

2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 3. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

2.5 FIBER REINFORCEMENT

- A. Synthetic Micro-Fiber: Fibrillated polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, 3/4 inches to 1-1/2 inches long.

2.6 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
- B. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils thick.

2.7 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.9 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
- C. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 5000 psi at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.38.
 - 3. Slump Limit: 5 to 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture.
 - 4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.
 - 5. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than a rate of 1.5 to 3.0 lb/cu. yd.

2.10 FABRICATING REINFORCEMENT

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

2.11 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Chamfer exterior corners and edges of permanently exposed concrete.

3.3 EMBEDDED ITEMS

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

3.4 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.

3.5 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.6 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

3.8 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces exposed to public view.
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

3.10 INTERIOR FLOOR SLAB GRINDING AND SEALING

- A. Surface Preparation
 - 1. Protect surrounding areas from the following:
 - a. Minimal accumulation of dust from grinding and polishing
 - b. Contact with overspray from concrete densifier
 - c. Contact with overspray from concrete sealer
 - 2. Prepare surfaces in accordance with manufacturer's instructions
 - 3. Clean surfaces to remove dirt, debris, oil, grease, curing agents, paint, coatings, bond breakers, and other surface contaminants.
- B. Grind and Seal
 - 1. Basis of Design: Subject to compliance requirements, products may be supplied by manufacturers other than those listed below.

2. Patch/Repair according to Section 03 01 30 "Patching of Cast-in-Place Concrete"
3. Preparation:
 - a. Prepare surface by diamond grinding with 60-80 grit tools to achieve a clean, uniform, porous surface that will allow the sealer to soak into the concrete.
 - b. Sweep and vacuum surface entirely.
4. Sealing:
 - a. Apply "B-O-G Modified Urethane Coating" from Ameripolish at a rate of approximately 500-1000 square feet per gallon (depending on the porosity of concrete).
 - b. Spray a mist of "B-O-G" onto concrete surface, and immediately spread evenly with microfiber mop. Apply enough material to attain 100% coverage, without dry streaking or puddling.
 - c. Apply 4 applications for optimal performance and aesthetics.

3.11 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching $0.2 \text{ lb/sq. ft. x h}$ (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION

SECTION 03 64 23 - PRESSURE EPOXY INJECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION

- A. The Contractor shall provide all necessary materials, equipment, and labor required to epoxy inject cracks at locations shown on drawings or as directed by the Engineer.

1.03 APPLICATOR QUALIFICATIONS

- A. The Contractor shall have a minimum of three years of experience performing work similar to that shown in the drawings and specifications.
- B. The Contractor shall submit a list of five projects in which similar work to that specified herein was successfully completed. The list shall contain the following for each of the five projects:
 - 1. Project Name
 - 2. Owner of Project
 - 3. Owner's Representative, Address, and Telephone Number
 - 4. Brief Description of Work
 - 5. Cost of Portion of Work Similar to that specified in this Section
 - 6. Total Restoration Cost of Project
 - 7. Date of Completion of Work
- C. The sum of the costs of the five projects provided in B.5 above shall be a minimum of \$50,000.
- D. A full-time on-site supervisor shall be provided by the Contractor for the entire duration of the epoxy injection work. The supervisor shall have had a minimum of 2 years of documented supervisory experience with the products to be used. If the supervisor does not have that experience, the supplier or manufacturer of the materials shall provide a full-time qualified, certified by the manufacturer, field inspector on jobsite during the entire period of material application. The Installation Contractor shall submit with his bid to the Engineer a proof of obtaining licenses or permits as required.

1.04 QUALITY CONTROL

- A. The materials supplier shall provide the following test data for each production run or batch of epoxy formulation to be used:
 - 1. Tensile strength by ASTM D638
 - 2. Elongation at break by ASTM D638
 - 3. Flexural strength of ASTM D790
 - 4. Flexural modulus by ASTM D790
 - 5. Compressive yield strength by ASTM D695
 - 6. Compressive modulus by ASTM D695
 - 7. Heat deflection temperature by ASTM D648
 - 8. Slant shear strength by AASHTO-237

1.05 SUBMITTALS

- A. The Contractor shall submit the following to the Engineer:
1. Documentation showing compliance with the Applicator Qualifications as specified hereinbefore.
 2. Technical data sheets published by the material manufacturers for each epoxy product or formulation to be used showing that his products meet the requirements of the specifications. Technical data shall include the following:
 - a. Intended use
 - b. Pot life (neat)
 - c. Initial cure time (1000 psi)
 - d. Tack free (thin film)
 - e. Final cure (75% ultimate strength)
 - f. Tensile strengths by ASTM D638-76 (14 days)
 - g. Tensile elongation by ASTM D638-76 modified (14 days)
 - h. Flexural strength and modulus per ASTM D790-71 at 24 hours, 3 days, and 7 days at 77 degrees F
 - i. 24-hr. compressive strength by ASTM C109 modified (1 part epoxy to 3-1/4 parts aggregate)
 3. Submit safety data sheets for each product.

1.06 PRODUCT DELIVERY

- A. The product shall be delivered and handled strictly according to the manufacturer's recommendations. Any containers of the material to be used which have been opened previously shall not be accepted.

1.07 JOB CONDITIONS

- A. Existing and environmental conditions: The Installation Contractor shall examine the condition of surfaces into which the epoxy is to be injected. He shall follow the recommendations of the manufacturer with regard to limitations of the materials in various moisture and temperature levels.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. The epoxy injection materials shall be a two-component, 100% solids, low viscosity, high strength epoxy resin adhesive. One of the following approved products shall be used:
1. "Sikadur 35, Hi-Mod LV or LPL" as manufactured by the Sika Corp., 800-933-SIKA
 2. "Concresive Standard LVI" as manufactured by Master Builders Tech., 800-227-3350
 3. "Eucopoly Injection Resin" as manufactured by the Euclid Chemical Co. 800-321-7628
 4. Approved equal

- B. One of the following approved products shall be used to seal injection ports and cracks for injection grouting:
 - 1. "Sikadur Injection Gel" as manufactured by the Sika Corp., 800-933-SIKA
 - 2. "Concresive Paste SPL" as manufactured by Master Builders Tech., 800-227-3350
 - 3. "Euco #452 or #620 Gel" as manufactured by the Euclid Chemical Co., 800-321-7628
 - 4. Approved equal

- C. Aggregate:
 - 1. Aggregate shall be clean, dry, graded, and bagged
 - 2. Well-rounded or spherical-shaped sand is recommended for flowability
 - 3. Aggregate may be graded as follows by volume:
 - a. 2 parts, 12 mesh to 1 part, 80 mesh, or
 - b. 3 parts, 16 mesh to 1 part, 90 mesh
 - 4. If the above sand is not used, 30 mesh silica sand shall be used.

2.02 MIXES

- A. Where approved by the Engineer, the Contractor may use a pre-placed aggregate technique. The ratio of binder to aggregate by volume shall be 0.8 or greater. Test data shall be submitted for conformance with the following:
 - 1. Compressive strength by ASTM D695-76-8000 psi minimum
 - 2. Compressive modulus by ASTM D695-76-2.75 x 10⁶ minimum

2.03 EQUIPMENT

- A. The equipment used to inject the epoxy shall meet all of the following performance requirements:
 - 1. Automatic proportioning of materials within the mix ratio tolerances set by the manufacturer of the epoxy material.
 - 2. Mix the epoxy automatically and completely in line (batch mixing will not be permitted).
 - 3. Inject the material under pressures recommended by the materials supplier.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION, INJECTION, AND DELIVERY SYSTEM

- A. The epoxy shall be injected into the cracks or joints only from the lower elevations of the members. The bottom, side, and top surfaces of cracked members must be sealed with a gel-consistency epoxy prior to injection, and must contain appropriate injection ports.
- B. The Contractor shall notify the Engineer of the start of the first injected cracks. In the event that unsound concrete is located in a zone along a crack, and this prevents the complete injection of the cracks, then the unsound concrete shall be removed prior to injection.
- C. The epoxy material injected into the cracks or joints shall be highly suited for this usage. The pressure injection system shall be capable of filling cracks as small as 0.002 inches in width.
- D. Where cracks to be injected have any existing sealant, waterproofing materials, or other debris in the cracks, these cracks shall be cleaned using low-pressure hot water or high-pressure water jet, as appropriate.

- E. The Contractor shall clean surfaces of excess epoxy by grinding or other appropriate means so that only the edge thickness of completed epoxy-injected cracks is noticeable. Injection ports shall not extend beyond the plane of the surfaces of the existing concrete.

3.02 PREPACKING LARGE CRACKS

- A. Where required in cracks of large thickness, the Contractor shall prepack the cracks with fine aggregates to minimize the effects of exotherm, or reduce tensile stresses caused by volume reduction during cooling of the injected epoxy.

3.03 FIELD QUALITY ASSURANCE

- A. The Contractor shall supply samples of the injection epoxy, non-sag epoxy, and epoxy mortar to the Testing Laboratory for the purpose of performing compression tests.
- B. A minimum of three samples per day of each epoxy formulation or use shall be made.
- C. Samples shall be made by placing epoxy into 3/8-in. inside diameter test tubes. The height of the sample shall be approximately 1 in. so that after trimming a cylinder of 3/8 in. diameter and 3/4" length can be obtained.
- D. The Contractor shall be responsible for drilling and removing two 1-in. diameter by 2-in. long cores into the side of injected members at the direction of the Engineer to determine whether the crack injection is complete. The contractor also shall provide samples of mixed epoxy for testing. If injection is incomplete (less than 90% of the injected crack filled), reinjection and additional cores may be required at the direction of the Engineer at no extra cost to the Owner.

END OF SECTION

SECTION 05 12 00 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Structural steel.
 - 2. Grout for baseplates and bearing plates.
- B. Related Sections:
 - 1. Division 03 Section "Cast-in-Place Concrete" for setting anchor rods and embedded plates in concrete.
 - 2. Division 05 Section "Architecturally Exposed Steel"
 - 3. Division 05 Section "Metal Stairs."
 - 4. Division 09 painting Sections for surface-preparation, priming requirements and touch up painting.

1.3 DEFINITIONS

- A. Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.4 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions and directions for installation.

1.5 PREINSTALLATION MEETINGS

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

1.6 PERFORMANCE REQUIREMENTS

- A. The drawings indicate typical connection details, specific connection details and/or connection details indicating design intent for the various connection locations required by the drawings. Simple connections may not be detailed on the drawings. The steel fabricator shall provide details of all connections including the connections not specifically detailed, following the intent of the drawings. The connection design shall be performed under the supervision of a qualified professional engineer registered in the state where the project is located. The connections shall be designed for loads shown on the drawings. Where the reactions of beams and girders are not shown, the connections shall be designed to support the maximum allowable uniform loads as indicated in the load tables of the AISC Steel Construction Manual for the given beam size and span. Double angle and single plate connections detailed in accordance with the AISC Steel Construction Manual are acceptable; single angle connections are not permitted.
 - 1. Select and complete connections using schematic details indicated and AISC 360.

1.7 ACTION SUBMITTALS

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

B. Shop Drawings:

1. Provide shop drawings including erection drawings and detail sheets of all structural steel components.
 - a. Erection drawings shall include at a minimum:
 - 1) Anchor rod plans and embedment plans showing templates and directions for installation of anchor rods and other anchorages and embedded items to be installed by others.
 - 2) Floor and roof plans.
 - 3) Mezzanines, entrances, canopies and trellis.
 - 4) Plans shall include member marks and all dimensions and elevations required to erect the structural steel.
 - 5) Details and/or sections of all erections that include field welding, assembly, processes, field alignment, etc.
 - b. For fabrication and detail drawings:
 - 1) Include sizes, dimensions, steel grade, surface preparation, primer paint, details of cuts, copes, connections, splices, camber, holes, and other pertinent data.
 - 2) Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
 - 3) Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.
 - 4) Identify members and connections of the seismic-load-resisting system.
 - 5) Indicate locations and dimensions of protected zones.
 - 6) Identify demand critical welds.
 2. The electronic files of the project's structural drawings will be provided upon request for use in the preparation of fabrication or erection drawings.
 - a. Prior to receiving the drawing files, the contractor is required to sign an "Agreement for Transfer and Use of Electronic Files."
 - b. The electronic files are not contract documents. Significant differences may exist between the electronic files and the corresponding hard copy documents due to addenda, change orders, revisions, layer visibility or other reasons. In the event of a conflict, printed hard copy drawings and specifications shall take precedence over electronic files. The Contractor is responsible to verify the accuracy of all data contained in the electronic files.
 - c. If the electronic files are imported into other software or applications packages for the purpose of preparing fabrication, erection, manufacturing drawings or any other type of document, the contractor shall verify all dimensions, lines, reference points, etc. with annotated dimensions found elsewhere in the contract documents. The Contractor is responsible to adjust the file accordingly prior to their use of the files.
- C. Delegated-Design Submittal: Calculations stamped and signed by an engineer registered in the state where project is located for:
1. Moment connections (flexible, partially restrained and fully restrained).
 2. As noted on drawings.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, fabricator and shop-painting applicators.
- B. Welding certificates.
- C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- D. Mill test reports for structural steel, including chemical and physical properties, to comply with ASTM A6 or ASTM A568.

- E. Product Test Reports: For the following:
 1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
 2. Direct-tension indicators.
 3. Tension-control, high-strength bolt-nut-washer assemblies.
 4. Shop primers.
 5. Nonshrink grout.
- F. Survey of existing conditions.
- G. Source quality-control reports.
- H. Field quality-control and special inspection reports.

1.9 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.
- B. Comply with applicable provisions of the following specifications and documents:
 1. AISC 303.
 2. AISC 341 and AISC 341s1.
 3. AISC 360.
 4. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
 2. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
 3. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
 4. Clean and relubricate bolts and nuts that become dry or rusty before use.
 5. Comply with manufacturers' written recommendations for cleaning and lubricating F1852 fasteners and for retesting fasteners after lubrication.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A 992/A 992M.
- B. Channels, Angles, M, S-Shapes: ASTM A 36/A 36M.
- C. Plate and Bar: ASTM A 36/A 36M or as noted on drawings.
- D. Cold-Formed Hollow Structural Sections: ASTM A 500/A 500M, Grade C, structural tubing.
- E. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
 1. Finish: Black except where indicated to be galvanized.
- F. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM F 3125, Grade A 325 or F 1852, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers; all with plain finish.
- B. Bolts, nuts and washers indicated to be galvanized on drawings shall be hot dipped galvanized per ASTM A153.
- C. Unheaded Anchor Rods: provide ASTM F 1554, Grade 36 unless noted otherwise on drawings.
 - 1. Configuration: Straight.
 - 2. Nuts: ASTM A 563 heavy-hex carbon steel.
 - 3. Plate Washers: ASTM A 36 carbon steel.
 - 4. Washers: ASTM F 436 Type 1, hardened carbon steel.
 - 5. Finish: Plain, except if noted on drawings to be galvanized, provide anchor rods, plates, nuts and washers hot dipped galvanized per ASTM A153, class C.
- D. Threaded Rods: ASTM A 36.
 - 1. Nuts: ASTM A 563 heavy-hex carbon steel.
 - 2. Washers: ASTM F 436, Type 1, hardened carbon steel.
 - 3. Finish: Plain, except if noted on drawings to be galvanized, provide threaded rods, nuts and washers hot dipped galvanized per ASTM A153, class C.

2.3 PRIMER

- A. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat. Color as indicated
- B. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20.

2.4 GROUT

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

2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.
 - 1. Camber structural-steel members where indicated.
 - 2. Fabricate beams with rolling camber up.
 - 3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
 - 4. Mark and match-mark materials for field assembly.
 - 5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
 - 1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

- E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC- SP 3, "Power Tool Cleaning."
- F. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.
 - 1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
 - 2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
 - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.
- G. Equipment Supports and Mechanical Opening Framing: Framing shown on structural drawings is for general arrangement only and may require modification to suit the actual purchased equipment. Coordinate with mechanical trades for necessary certified drawings before starting fabrication. Steel Fabricator shall provide a complete job ready for installation of equipment, and Contract price shall cover this requirement regardless of subsequent modifications to framing shown on drawings, at no extra cost to the Owner.

2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Snug tightened, pre-tensioned or slip critical as indicated on the drawings. Twist-off type tension-control bolts are permitted only at joints indicated as pre-tensioned or slip critical.
- B. Weld Connections: Comply with AWS D1.1/D1.1M (Structural welding code) and AWS D1.8/D1.8M (Structural welding code, Seismic Supplement) for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
 - 1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

2.7 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 - 2. Surfaces to be field welded.
 - 3. Surfaces to be high-strength bolted with slip-critical connections.
 - 4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
 - 5. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
 - 1. All interior steel exposed to view SSPC – SP6 commercial blast cleaned.
 - 2. All exterior steel exposed to weather SSPC – SP10/NACE No. 2 near white blast cleaned.
 - 3. All other steel SSPC – SP3 power tool cleaned.
 - 4. SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning" for architecturally exposed steel, unless otherwise indicated in Division 05 Section "Architecturally Exposed Structural Steel Framing."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

2.8 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel indicated on drawings according to ASTM A 123/A 123M.

1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.

2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage a special inspector to perform shop tests and inspections and prepare test reports.
 1. Provide special inspector and testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
- B. Correct deficiencies in Work that test reports and inspections indicate do not comply with the Contract Documents.
- C. Bolted Connections: Shop-bolted connections shall be inspected according to RCSC's "Specification for Structural Joints Using High-Strength Bolts."
- D. Welded Connections: all shop welded connections shall be visually inspected according to AWS D1.1/D1.1M.
- E. In addition to visual inspection, complete penetration shop-welded connections shall be tested and inspected according to AWS D1.1/D1.1M by ultrasonic inspection procedures per ASTM E164.
- F. Required special inspection and verification as outlined in the applicable building code, including but not limited to:
 1. Material verification of high strength bolts, nuts and washers.
 2. Inspection of high strength bolting.
 3. Material verification of steel.
 4. Review of welders' certification.
 5. Material verification of weld filler material.
 6. Inspection of welding.
 7. Inspection of joint details.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with steel Erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
 1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Base, Bearing and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 2. Weld plate washers to top of baseplate.
 3. Snug-tighten anchor rods after supported members have been positioned and plumbed.

- Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
- 4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC 303 "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
 - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
 - 1. Snug tight joints (bearing bolts) shall be tightened such that all plies are brought into firm contact only. This is attained with a few impacts of an impact wrench or the full effort of an ironworker using an ordinary spud wrench. Do not over-tighten bearing bolts. Do not use twist-off type tension-control bolts for bearing bolts.
 - 2. Pretensioned and Slip-critical bolts shall be tightened in accordance with AISC by the turn of the nut method, by using direct tension indicators, by properly calibrated wrenches or by using twist-off type tension-control bolts.
- B. Weld Connections: Comply with AWS D1.1/D1.1M (Structural welding code) and AWS D1.8/D1.8M (Structural welding code, Seismic Supplement) for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
 - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
 - 2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
 - 3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a special inspector to perform tests and inspections and prepare the necessary reports.
- B. Required special inspection and verification as outlined in the applicable building code, including but not limited to:
 - 1. Material verification of high strength bolts, nuts and washers.
 - 2. Inspection of high strength bolting.
 - 3. Material verification of steel.
 - 4. Review of welders' certification.
 - 5. Material verification of weld filler material.
 - 6. Inspection of welding.
 - 7. Inspection of joint details.

- C. Bolted Connections: Bolted connections shall be tested and inspected according to RCSC's "Specification for Structural Joints Using High-Strength Bolts." Non-slip-critical connections require only visual inspection. Pre-tensioned and slip-critical connections require inspection to conform with AISC specifications for the method of tightening selected. Contractor shall discuss with the Engineer prior to erection.
- D. Welded Connections: All field welds shall be visually inspected according to AWS D1.1/D1.1M.
 - 1. In addition to visual inspection, full penetration field welds shall be tested and inspected according to AWS D1.1/D1.1M by ultrasonic inspection procedures, per ASTM E164.
- E. Correct deficiencies in Work that test reports and inspections indicate do not comply with the Contract Documents.

3.6 REPAIRS AND PROTECTION

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.
- B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC- PA 1 for touching up shop-painted surfaces.
 - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 09 painting Sections.

END OF SECTION

SECTION 05 12 13 - ARCHITECTURALLY EXPOSED STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Related Requirements:
 - 1. Section 05 50 00 "Metal Fabrications" for miscellaneous steel fabrications and other metal items not defined as structural steel.
 - 2. Section 09 91 13 "Exterior Painting" and Section 09 91 23 "Interior Painting".
- B. AESS: Architecturally exposed structural steel.
- C. Categories:
 - 1. AESS 1, Basic Elements: Structural steel that is categorized by ANSI/AISC 303, Section 10, as AESS 1 and may be designated AESS 1 or Category AESS 1 in the Contract Documents.
 - 2. AESS 2, Feature Elements Not in Close View: Structural steel that is categorized by ANSI/AISC 303, Section 10, as AESS 2 and is designated as AESS 2 or Category AESS 2 in the Contract Documents.

1.3 COORDINATION

- A. Coordinate surface preparation requirements for shop-primed items.
- B. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

1.4 PREINSTALLATION MEETINGS

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

1.5 SUBMITTALS

- A. Product Data:
 - 1. Filler.
 - 2. Primer.
 - 3. Galvanized-steel primer.
 - 4. Etching cleaner.
 - 5. Galvanized repair paint.
- B. Shop Drawings: Show fabrication of AESS components. Shop Drawings for structural steel may be used for AESS.
 - 1. Identify AESS category for each steel member and connection, including transitions between AESS categories and between AESS and non-AESS.

2. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
3. Include embedment Drawings.
4. Indicate orientation of mill marks and HSS seams.
5. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain. Indicate grinding, finish, and profile of welds.
6. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections. Indicate orientation and location of bolt heads.
7. Indicate exposed surfaces and edges and surface preparation being used.
8. Indicate special tolerances and erection requirements.
9. Indicate weep holes for HSS and vent holes for galvanized HSS.
10. Indicate surface preparation, primer, and coating requirements, including systems specified in other Sections.

C. Qualification Data: For fabricator, installer, and shop-painting applicator.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU, or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC 172) and is experienced in fabricating AESS similar to that indicated on this Project.
- B. Installer Qualifications: A qualified Installer who participates in the AISC Quality Certification Program, is designated an AISC-Certified Erector, Category CSE, and is experienced in erecting AESS similar to that indicated on this Project.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Use special care in handling AESS to prevent twisting, warping, nicking, and other damage during fabrication, delivery, and erection. Store materials to permit easy access for inspection and identification. Keep AESS members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect AESS members and packaged materials from corrosion and deterioration.
 1. Do not store AESS materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.8 FIELD CONDITIONS

- A. Field Measurements: Where AESS is indicated to fit against other construction, verify actual dimensions by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of ANSI/AISC 303, Sections 1 through 9 and as modified in Section 10, "Architecturally Exposed Structural Steel."

2.2 FILLER

- A. Polyester filler commonly used in repairing dents in automobile bodies.

2.3 FABRICATION

- A. Shop fabricate and assemble AESS to the maximum extent possible. Locate field joints at concealed locations if possible. Detail assemblies to minimize handling and to expedite erection.
 - 1. Use special care handling and fabricating AESS before and after shop painting to minimize damage to shop finish.

- B. Category AESS 1, Basic Elements:
 - 1. Comply with overall profile dimensions of AWS D1.1 for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
 - 2. Prepare surfaces according to Part 2.7 "Shop Priming" Article and SSPC-SP7 (WAB)/NACE WAB-4.
 - 3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
 - 4. Make intermittent welds appear continuous, using filler or additional welding.
 - 5. Seal weld open ends of hollow structural sections with 3/8-inch closure plates.
 - 6. Limit butt and plug weld projections to 1/16 inch.
 - 7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
 - 8. Remove weld spatter, slivers, and similar surface discontinuities.
 - 9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
 - 10. Grind tack welds smooth unless incorporated into final welds.
 - 11. Remove backing and runoff tabs, and grind welds smooth.

- C. Category AESS 2, Feature Elements Not in Close View:
 - 1. Comply with overall profile dimensions of AWS D1.1 for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
 - 2. Prepare surfaces according to Part 2.7 "Shop Priming" Article and SSPC-SP11.
 - 3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
 - 4. Make intermittent welds appear continuous, using filler or additional welding.
 - 5. Seal weld open ends of hollow structural sections with 3/8-inch closure plates.
 - 6. Limit butt and plug weld projections to 1/16 inch.
 - 7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
 - 8. Remove weld spatter, slivers, and similar surface discontinuities.
 - 9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
 - 10. Grind tack welds smooth unless incorporated into final welds.
 - 11. Remove backing and runoff tabs, and grind welds smooth.
 - 12. Limit as-fabricated straightness tolerance to one-half that permitted for structural-steel materials in ANSI/AISC 303.
 - 13. Limit as-fabricated curved structural steel tolerance to that permitted for structural-steel materials in ANSI/AISC 303.
 - 14. Limit as-fabricated straightness tolerance of welded built-up members to one-half that permitted by AWS D1.1/D1.1M.
 - 15. Conceal fabrication and erection markings from view in the completed structure.
 - 16. Make welds uniform and smooth.

2.4 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1 and AWS D1.8 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

2.5 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A123.
 - 1. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
 - 2. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
 - 3. Galvanize AESS lintels attached to structural-steel frame and located in exterior walls.
- B. Surface Preparation: Clean nongalvanized surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards as needed to meet the requirements of AESS Categories 1 through 4:
 - 1. SSPC-SP 3.
 - 2. SSPC-SP 7 (WAB)/NACE WAB-4.
 - 3. SSPC-SP 14 (WAB)/NACE WAB-8.
 - 4. SSPC-SP 11.
 - 5. SSPC-SP 6 (WAB)/NACE WAB-3.
 - 6. SSPC-SP 10 (WAB)/NACE WAB-2.
 - 7. SSPC-SP 5 (WAB)/NACE WAB-1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
 - 1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments, showing dimensions, locations, angles, and elevations.
- B. Examine AESS for twists, kinks, warping, gouges, and other imperfections before erecting.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep AESS secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION

- A. Take special care during erection to avoid marking or distorting the AESS and to minimize damage to shop painting. Set AESS accurately in locations and to elevations indicated and according to ANSI/AISC 303 and ANSI/AISC 360.
1. Remove welded tabs that were used for attaching temporary bracing and safety cabling and that are exposed to view in the completed Work. Take care to avoid any blemishes, holes, or unsightly surfaces resulting from the use or removal of temporary elements.
 2. Grind tack welds smooth.
 3. Remove backing and runoff tabs, and grind welds smooth.
 4. Orient bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
 5. Remove erection bolts in Category AESS 4, fill holes with weld metal or filler, and grind or sand smooth to achieve surface quality approved by Architect.
 6. Fill weld access holes in Category AESS 4 with weld metal or filler and grind, or sand smooth to achieve surface quality as approved by Architect.
 7. Conceal fabrication and erection markings from view in the completed structure.
- B. In addition to ANSI/AISC 303, Section 10 requirements, comply with the following.
1. Erection of Category AESS 1 and Category AESS 2:
 - a. Erect AESS to the **one half** standard frame tolerances specified in ANSI/AISC 303 for non-AESS.
 - b. Comply with AWS D1.1. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
 - c. Remove weld spatter, slivers, and similar surface discontinuities.
 - d. Grind off butt and plug weld projections larger than 1/16 inch.
 - e. Continuous welds shall be of uniform size and profile.
 - f. Ream holes that must be enlarged. Use of drift pins or burning is not permitted. Replace misaligned connection plates where holes cannot be aligned with acceptable appearance.
 - g. Splice members only where indicated on Drawings.
 - h. No torch cutting or field fabrication is permitted.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
1. Joint Type: Snug tightened.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to inspect AESS. The testing agency is not responsible for enforcing requirements relating to aesthetic effect.
- B. Architect will observe AESS in place to determine acceptability relating to aesthetic effect.

3.6 PROTECTION

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and touchup galvanizing to comply with ASTM A780.

END OF SECTION

SECTION 05 51 00 - METAL STAIRS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Preassembled steel stairs.
 - 2. Steel railings.
 - 3. Steel handrails.

1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design metal stairs, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance of Stairs: Provide metal stairs capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Uniform Load: 100 lbf/sq. ft.
 - 2. Concentrated Load: 300 lbf applied on an area of 4 sq. in..
 - 3. Uniform and concentrated loads need not be assumed to act concurrently.
 - 4. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.
 - 5. Limit deflection of treads, platforms, and framing members to L/360 or 1/4 inch, whichever is less.
- C. Structural Performance of Railings: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
 - 2. Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
 - 3. Infill of Guards:
 - a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
 - b. Infill load and other loads need not be assumed to act concurrently.
- D. Seismic Performance: Provide metal stairs capable of withstanding the effects of earthquake motions determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 09, "Earthquake Loads."

1.3 SUBMITTALS

- A. Product Data: For metal stairs and the following:
 - 1. Galvanizing.
 - 2. Grout.
 - 3. Caulk/sealant.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Provide templates for anchors and bolts specified for installation under other Sections.
 - 2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products.
- B. NAAMM Stair Standard: Comply with "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" in NAAMM AMP 510, "Metal Stairs Manual," for class of stair designated, unless more stringent requirements are indicated.

1. Preassembled Stairs: Commercial class.
- C. Welding: Qualify procedures and personnel according to the following:
1. AWS D1.1, "Structural Welding Code--Steel."
 2. AWS D1.3, "Structural Welding Code--Sheet Steel."
- 1.5 COORDINATION
- A. Coordinate installation of anchorages for metal stairs. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
 - B. Coordinate locations of hanger rods and struts with other work so that they will not encroach on required stair width and will be within the fire-resistance-rated stair enclosure.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).
- C. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36 or ASTM A 283, Grade C or D.
- D. Abrasive-Surface Floor Plate: Steel plate [with abrasive granules rolled into surface] [or] [with abrasive material metallurgically bonded to steel by a proprietary process].
- E. Steel Bars for Grating Treads: ASTM A 36.
- F. Iron Castings: Either gray or malleable iron, unless otherwise indicated.
 1. Gray Iron: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.
 2. Malleable Iron: ASTM A 47.
- G. Uncoated, Cold-Rolled Steel Sheet: ASTM A 1008, structural steel, Grade 25, unless another grade is required by design loads; exposed.

2.3 FASTENERS

- A. General: Provide zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 25 for exterior use, and Class Fe/Zn 5 where built into exterior walls. Select fasteners for type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.
- C. Anchor Bolts: ASTM F 1554, Grade 36.
 1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts for exterior stairs, stairs indicated to be galvanized, stairs indicated to be shop primed with zinc-rich primer.
- D. Machine Screws: ASME B18.6.3.
- E. Lag Bolts: ASME B18.2.1.
- F. Plain Washers: Round, ASME B18.22.1.
- G. Lock Washers: Helical, spring type, ASME B18.21.1.
- H. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when

installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

1. Material for Anchors in Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Material for Anchors in Exterior Locations: Alloy Group 1 stainless-steel bolts complying with ASTM F 593 and nuts complying with ASTM F 594.

2.4 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Division 09 Painting Sections.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Nonshrink, Nonmetallic Grout for stringers with grouted base plates: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- F. Concrete Materials and Properties: Comply with requirements in Division 03 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.
 1. Welded Wire Fabric: ASTM A 185, 6 by 6 inches--W1.4 by W1.4, unless otherwise indicated.
 2. Clear, Waterborne, Membrane Forming Curing Compound per Division 03 "Cast in Place Concrete".

2.5 FABRICATION, GENERAL

- A. Provide complete stair assemblies, including metal framing, hangers, struts, railings, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.
 1. Join components by welding, unless otherwise indicated.
 2. Use connections that maintain structural value of joined pieces.
- B. Preassembled Stairs: Assemble stairs in shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Pieces to be assembled after galvanizing process has been completed should be bolted, not welded.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- E. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
- F. Weld connections to comply with the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. Weld exposed corners and seams continuously, unless otherwise indicated.
 5. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts unless otherwise indicated. Locate joints where least conspicuous.
- H. Fabricate joints that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.6 STEEL-FRAMED STAIRS

- A. NAAMM Stair Standard: Comply with NAAMM AMP 510, "Metal Stairs Manual," for Commercial Class, unless more stringent requirements are indicated.
- B. Stair Framing:
 - 1. Fabricate stringers of steel tubes or channels.
 - a. Provide closures for exposed ends of tube stringers.
 - 2. Construct platforms of steel channel headers and miscellaneous framing members as needed to comply with performance requirements.
 - 3. Shop weld stringers to headers; weld framing members to stringers and headers.
 - 4. Field bolt members.
 - 5. Where masonry walls support metal stairs, provide temporary supporting struts designed for erecting steel stair components before installing masonry.
- C. Metal Grate Stairs:
 - 1. Treads shall be standard-duty welded bar grating with cast abrasive nosing. Bars shall be spaced to allow no greater than 3/8 inches.
 - 2. Form risers to configurations shown from steel sheet of thickness needed to comply with performance requirements but not less than 0.0677 inch.

2.7 STEEL TUBE RAILINGS

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of tube, post spacing, and anchorage, but not less than that needed to withstand indicated loads.
 - 1. Configuration:
 - a. 1-1/2-inch- diameter top rails and bottom rails, and posts.
 - b. 3/4-inch- round pickets spaced less than 4 inches clear.
 - c. 1-inch- round intermediate infill rails spaced less than 4 inches clear.
- B. Welded Connections: Fabricate railings with welded connections. Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
- C. Form changes in direction of railings as follows:
 - 1. By bending or by inserting prefabricated elbow fittings.
- D. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- E. Close exposed ends of railing members with prefabricated end fittings.
- F. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns.
- G. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnecting components and for attaching to other work. Furnish inserts and other anchorage devices for connecting to concrete or masonry work.
 - 1. Connect posts to stair framing by direct welding, unless otherwise indicated.
 - 2. For galvanized railings, provide galvanized fittings, brackets, fasteners, sleeves, and other ferrous-metal components.
 - 3. For nongalvanized railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors embedded in exterior masonry and concrete construction.
- H. Fillers: Provide fillers made from steel plate, or other suitably crush-resistant material, where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses and to produce adequate bearing area to prevent bracket rotation and overstressing of substrate.

2.8 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal stairs after assembly.
- C. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123, for galvanizing steel and iron products.
 - 2. ASTM A 153, for galvanizing steel and iron hardware.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.
- B. Install metal stairs by bolting stair framing to steel structure or to plates cast into concrete, unless otherwise indicated.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Bolt connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- E. Cutting, Fitting, and Placement: Field cutting, drilling, and fitting required for installing metal stairs is to be kept to a minimum so as not to disturb the hot-dip galvanized finish. Any disturbance of galvanized finish shall be cold paint galvanized in a clean, orderly manner. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.

3.2 INSTALLING METAL STAIRS WITH GROUTED BASEPLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of baseplates.
- B. Set steel stair baseplates on wedges, shims, or leveling nuts. After stairs have been positioned and aligned, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
 - 1. Use nonmetallic, nonshrink grout, unless otherwise indicated.
 - 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.3 INSTALLING STEEL TUBE RAILINGS

- A. Adjust railing systems before anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated or, if not indicated, as required by design loads. Plumb posts in each direction. Secure posts and rail ends to building construction as follows:
 - 1. Anchor posts to steel by bolting/screwing into post sleeves.
 - 2. Anchor handrail ends to concrete and masonry with steel round flanges welded to rail ends and anchored with post-installed anchors and bolts.
- B. Attach handrails to wall with wall brackets. Provide bracket with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. Secure wall brackets to building construction as follows:
 - 1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
 - 2. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 - 3. For hollow masonry anchorage, use toggle bolts.

4. For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed steel reinforcements using self-tapping screws of size and type required to support structural loads.

3.4 ADJUSTING AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION

SECTION 06 00 00 - TREATED WOOD COMPOSITE TRIM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior-grade, treated wood composite trim for non-structural applications.

1.2 REFERENCE STANDARDS

- A. ASTM C 920 – Standard Specification for Elastomeric Joint Sealants.
- B. ASTM D 1037 – Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.
- C. AWPA E7 – Standard Method of Evaluating Wood Preservatives by Field Tests with Stakes.
- D. AWPA E16 – Field Test for Evaluation of Wood Preservatives to be Used Out of Ground Contact: Horizontal Lap-Joint Method.
- E. ANSI/UL 723 (ASTM E84-01) – Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, including installation instructions.
- B. Samples: Submit manufacturer's sample of composite trim.
 - 1. Sample Size: Minimum 5 inches by 5 inches.
- C. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- D. Warranty Documentation: Submit manufacturer's standard warranty.

1.4 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged, for past 10 years, in manufacture of composite trim of similar type to that specified.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling Requirements:
 - 1. Store and handle materials in accordance with manufacturer's instructions.
 - 2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
 - 3. Store composite trim under cover, protected from weather, off ground, and on flat surface.
 - 4. Keep composite trim dry.
 - 5. Protect materials during storage, handling, and installation to prevent damage.

1.6 WARRANTY

- A. Warranty Period:
 - 1. Composite Trim Material: 50 years.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis of Design Product: JELD-WEN, inc., 825 Shiner Road, PO Box 311, Towanda, Pennsylvania 18848. Toll Free 800-255-0785. Website www.miratectrim.com. E-mail miratec@jeld-wen.com.
- B. Subject to compliance with performance and appearance requirements and approval of Architect, a comparable product may be proposed.

2.2 EXTERIOR TREATED WOOD COMPOSITE TRIM

- A. Composite Trim: "MiraTEC" exterior treated wood composite trim.
 - 1. Description: Exterior-grade, treated wood composite trim for non-structural applications.
 - 2. Compliance: ICC-ES Evaluation Report ESR-3043.
 - 3. Material:
 - a. Wood fibers combined with phenolic resins, zinc borate, and water repellent.
 - b. No added urea formaldehyde.
 - 4. Surface:
 - a. Clear cedar wood grain texture on 1 side, smooth surface on other side.
 - b. Factory-primed on 4 sides with low VOC primer containing mildewcide.
 - 5. Substrate:
 - a. 1-piece solid substrate, uniform density, not laminated.
 - b. No knots or voids.
 - 6. Thickness: 4/4 (3/4-inch actual) or 5/4 (1-inch actual) as Indicated on the Drawings or to match existing conditions.
- B. Typical Properties, 4/4 Thickness:
 - 1. Density, ASTM D 1037: 47.6 pcf.
 - 2. Modulus of Rupture, ASTM D 1037: 2,860 psi.
 - 3. 24-Hour Soak, ASTM D 1037:
 - a. Water Absorption: 6.6 percent.
 - b. Thickness Swell: 2.8 percent.
 - 4. Accelerated Aging Test, 6-Cycle, ASTM D 1037: Retained 90 percent of original strength.
 - 5. Termite Resistance and Decay, AWPA E7 Rating Scale, 3-Year Exposure: 7.8 out of 10.
 - 6. Rot Resistance, AWPA E16: 1.0 out of 5.
 - 7. ANSI/UL 723 (ASTM E84-01):
 - a. Flame Spread: 125.
 - b. Smoke Developed: 110.

2.3 ACCESSORIES

- A. Adhesives: Designed for use on wood composite materials.
- B. Fasteners:
 - 1. Nails appropriate to style of construction and as specified.

2. Equal or better in performance (such as nail withdrawal, bending strength, and corrosion resistance) to 6d or 8d 15-gauge finish nails or headed nails.
 3. Long enough to penetrate 1-1/4 inches into structural wood studs or studs and structural sheathing material.
 4. Corrosive resistance equivalent to hot-dipped galvanized nails or stainless steel.
 5. Fasteners Not Acceptable:
 - a. Staples.
 - b. Brads.
 - c. T-nails.
- C. Joint Sealants:
1. Exterior quality sealants that remain flexible over time.
 2. ASTM C 920.
 3. Specified in Section 07 92 00.
 4. Not Acceptable: Hard-setting caulk or Bondo.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas and surfaces to receive composite trim.
- B. Notify Architect of conditions that would adversely affect installation.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. Install composite trim in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install composite trim plumb, level, and square.
- C. Cut composite trim in accordance with manufacturer's instructions.
- D. Fastening:
 1. Fasten composite trim in accordance with manufacturer's instructions.
 2. Set nails a minimum of 1/2 inch from edge.
 3. Do not nail into edges.
 4. Set nails flush or slightly countersunk not more than 1/8 inch.
 5. Apply spackling putty. Reapply putty as needed for desired appearance.
 6. 4/4 and 5/4 Fascia and Soffit Applications: Fasten directly to rafter ends, double nail a minimum of 24 inches on center.
 7. 5/8-Inch Fascia and Soffit Applications: Include trim sub-fascia and nail 16 inches on center to rafter ends or sub-fascia.
 8. All Other Horizontal and Vertical Applications: Double nail 16 inches on center, falling on studs.
 9. Fasten trim from one end to the other.
 10. Do not nail towards the center from both ends.
 11. Use adhesives in accordance with adhesive manufacturer's instructions.
- E. Butt Joints:
 1. Ensure joints fall over framing members.

2. Miter, scarf, or bevel composite trim as required.
3. Runs Less than 30 Feet in Length: Install butt joints to lightly touch.
4. Runs Over 30 Feet in Length: Space butt and scarf joints 1/8 inch apart and apply joint sealants into full depth of 1/8-inch joint.
5. Double nail on both sides of joint, a minimum of 1/2 inch from edge.

F. Flashing and Moisture Control:

1. Do not apply composite trim to wet sheathing.
2. Do not apply composite trim closer than 6 inches to finished grade or final landscaping.
3. Do not allow composite trim to stand in water.
4. Do not allow direct contact of composite trim with masonry or concrete.
5. Do not allow water to stand on or leak behind composite trim.
6. Properly flash and space composite trim a minimum of 1/2 inch from concrete flatwork or horizontal brick ledge.
7. Separate composite trim at foundations or brick veneer from masonry by metal flashing, polyethylene film, 30-lb. felt, or 1/4-inch to 1/2-inch air space using masonry standoffs.
8. Horizontal Applications including Window and Door Headers: Flash in accordance with siding manufacturer's, window manufacturer's, or door manufacturer's instructions.
9. Maintain a minimum angle of 100 degrees from vertical to provide positive drainage.

G. Joint Sealants: Apply joint sealants at butt joints and where composite trim abuts siding, windows, doors, or other materials.

H. Paint Application:

1. Prime and paint exposed field-cut edges of composite trim using high-quality exterior oil/alkyd solvent-based or acrylic-latex primer recommended by paint manufacturer for application over composite wood substrates.
2. Coat exposed surfaces including bottom edge.
3. Finish composite trim with 2 coats of paint within 90 days after installation.
4. If material is not painted within 90 days, reprime composite trim using exterior primer recommended for use on composite wood products and is compatible with topcoat to be used.
5. Use same primer for repair of damage to original factory-applied primer.
6. Apply total field-applied dry film paint thickness of a minimum of 2-1/2 mils on composite trim.

3.3 PROTECTION

- A. Protect installed composite trim to ensure that, except for normal weathering, trim will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Framing with dimension lumber.
 - 2. Framing with engineered wood products.
 - 3. Wood blocking and nailers
 - 4. Wood furring and grounds.
 - 5. Plywood backing panels.

1.2 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee Board of Review.
- C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
 - 1. Wood-preservative-treated wood.
 - 2. Power-driven fasteners.
 - 3. Powder-actuated fasteners.
 - 4. Expansion anchors.
 - 5. Metal framing anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPA C2.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.

- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 - 4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
 - 5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

- A. Maximum Moisture Content: 19 percent
- B. Non-Load-Bearing Interior Partitions: Construction or No. 2, grade of any species.
- C. Framing Other Than Non-Load-Bearing Interior Partitions: No. 1 or No. 2 grade and any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Southern pine; SPIB.
 - 3. Douglas fir-larch; WCLIB or WWPA.
 - 4. Mixed southern pine; SPIB.
 - 5. Spruce-pine-fir; NLGA.
 - 6. Douglas fir-south; WWPA.
 - 7. Hem-fir; WCLIB or WWPA.
 - 8. Douglas fir-larch (north); NLGA.
 - 9. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- D. Exposed Exterior and Interior Framing Indicated to Receive a Stained or Natural Finish: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
 - 1. Species and Grade: As indicated in the drawings.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Furring.
- B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber with 19 percent maximum moisture content of any species.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine, No. 3 grade; SPIB.
 - 2. Eastern softwoods, No. 3 Common grade; NeLMA.
 - 3. Northern species, No. 3 Common grade; NLGA.
 - 4. Western woods, Standard or No. 3 Common grade; WCLIB or WWPA.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

2.6 METAL FRAMING ANCHORS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings or comparable products by Simpson Strong-Tie Co., Inc.
- D. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated or of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- E. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

2.7 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch (25-mm) nominal thickness, compressible to 1/32 inch (0.8 mm); selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Flexible Flashing: Self-adhesive, rubberized-asphalt compound, bonded to a high-density, polyethylene film to produce an overall thickness of not less than 0.025 inch (0.6 mm).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- C. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- D. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.
- E. Do not splice structural members between supports, unless otherwise indicated.

- F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- G. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

SECTION 06 16 00 - SHEATHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Plywood sheathing.

1.3 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. For products receiving waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated plywood.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PANEL PRODUCTS

- A. Plywood: Either DOC PS 1 or DOC PS 2 unless otherwise indicated.
- B. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- C. Factory mark panels to indicate compliance with applicable standard.

2.2 PLYWOOD SHEATHING

- A. Plywood Wall and Parapet Sheathing: Either DOC PS 1 or DOC PS 2, Exposure 1, Fire Retardant Treated, Exterior sheathing.
 - 1. Span Rating: Not less than 24/0.
 - 2. Nominal Thickness: As indicated on Drawings, but not less than 5/8 inch.

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. For sheathing, provide fasteners with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
 - 2. For plywood sheathing, provide fasteners of Type 304 stainless steel.
- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES-AC70..
- C. Screws for Fastening Plywood Sheathing to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- D. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached.
 - 1. For steel framing less than 0.0329 inch thick, use screws that comply with ASTM C 1002.
 - 2. For steel framing from 0.033 to 0.112 inch thick, use screws that comply with ASTM C 954.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
 2. ICC-ES evaluation report for fastener.
- D. Coordinate sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- F. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 PLYWOOD SHEATHING INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
1. Wall, Parapet and Soffit Sheathing:
 - a. Screw to cold-formed metal framing.
 - b. Space panels 1/8 inch apart at edges and ends.

END OF SECTION

SECTION 06 65 00 - SYNTHETIC TRIM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior synthetic (poly-ash) trim.

1.2 REFERENCE STANDARDS

- A. ASTM C 1185 – Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards.
- B. ASTM D 570 – Standard Test Method for Water Absorption of Plastics.
- C. ASTM D 1761 – Standard Test Methods for Mechanical Fasteners in Wood.
- D. ASTM D 6341 – Standard Test Method for Determination of the Linear Coefficient of Thermal Expansion of Plastic Lumber and Plastic Lumber Shapes Between -30 and 140°F (-34.4 and 60°C).
- E. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- F. AWPA E1 – Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites.
- G. AWPA E10 – Standard Method of Testing Wood Preservatives by Laboratory Soil-Block Cultures.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, including installation instructions.
- B. Samples: Submit manufacturer's sample of exterior synthetic trim, minimum 1 inch by 4 inches by 8 inches long.
- C. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- D. Warranty Documentation: Submit manufacturer's standard warranty.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Storage and Handling Requirements:
 - 1. Store and handle materials in accordance with manufacturer's instructions.
 - 2. Keep materials in protective covering until installation.
 - 3. Store materials in clean, dry area.
 - 4. Store exterior synthetic trim on flat, level surface.
 - 5. Keep exterior synthetic trim covered and free of dirt and debris.
 - 6. Protect materials and finish during storage, handling, and installation to prevent damage.

1.5 WARRANTY

- A. Warranty Period for Exterior Synthetic Trim: 20-year limited warranty.
 - 1. No decay due to rot.
 - 2. No excess swelling from moisture.
 - 3. Resist termite damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Boral Composites Inc., 200 Mansell Court East, Suite 305, Roswell, Georgia 30076. Toll Free 888-926-7259. www.BoralTruExterior.com. info@TruExterior.com.

2.2 EXTERIOR SYNTHETIC TRIM

- A. Exterior Synthetic (Poly-ash) Trim: Boral TruExterior® Trim.
- B. Composition:
 - 1. Post-Industrial Recycled Content: Minimum 70 percent, by weight.
 - 2. Post-Consumer Recycled Content: Minimum 2 percent, by weight
 - 3. Pigments and dyes.
- C. Physical Properties:
 - 1. Density, ASTM C 1185: 40 to 50 pcf.
 - 2. Water Absorption, ASTM D 570: Less than 1.5 percent.
 - 3. Fungi Rot, AWWPA E10:
 - a. White Rot: Negligible loss.
 - b. Brown Rot: Negligible loss.
 - 4. Termite Resistance, AWWPA E1: Greater than 9.0, with 10 being impervious.
- D. Mechanical Properties:
 - 1. Flexural Strength, ASTM C 1185: Greater than 1,600 psi.
 - 2. Nail Withdrawal, ASTM D 1761: Greater than 40 lbf/in.
- E. Thermal Properties:
 - 1. Coefficient of Linear Expansion, ASTM D 6341, Typical: 1.40E-05 in/in/degree F, tested at minus 30 to 140 degrees F.
 - 2. Flame Spread, ASTM E 84: Between 25 and 29
 - 3. Smoke Developed, ASTM E 84: Less than 450.
- F. Trim Sizes:
 - 1. Common nominal lumber sizes. 4/4 (3/4-inch actual) or 5/4 (1-inch actual) thickness as Indicated on the Drawings or to match existing conditions
 - 2. Manufacturing Tolerances:
 - a. Width: Plus or minus 1/16 inch.
 - b. Thickness: Plus or minus 1/16 inch.
 - c. Length: Plus 2 inches, minus 0 inch.
 - d. Edge Cut: Plus or minus 2 degrees.

3. Exposed Texture: Smooth.

2.3 FINISHES

- A. Primer:
 1. Acrylic based.
 2. Low VOC.
 3. Factory applied on all sides.

2.4 ACCESSORIES

- A. Adhesives: Designed for use on wood and synthetic (poly-ash) materials.
- B. Fasteners:
 1. Nails appropriate to style of construction and as specified.
 2. Equal or better in performance (such as nail withdrawal, bending strength, and corrosion resistance) to 6d or 8d 15-gauge finish nails or headed nails.
 3. Long enough to penetrate 1-1/4 inches into structural wood studs or studs and structural sheathing material.
 4. Corrosive resistance equivalent to hot-dipped galvanized nails or stainless steel.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive exterior synthetic trim.
- B. Notify Architect of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. Install exterior synthetic trim in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Do not install exterior synthetic trim in structural or load-bearing applications.
- C. Install exterior synthetic trim plumb, level, and square.
- D. Install exterior synthetic trim with flush, tight joints.
- E. Install Fasteners:
 1. Maximum of 24 inches on center.
 2. Within 2 inches of end of boards.
- F. Fill nail and screw holes with acrylic caulk, wood filler, or auto body filler.
- G. Repair minor damages to exterior synthetic trim in accordance with manufacturer's instructions and as approved by Architect.
- H. Remove and replace damaged exterior synthetic trim that cannot be successfully repaired as determined by Architect.

I. Painting:

1. Apply top coat to exterior synthetic trim over factory-applied primer.
 - a. Within 150 days of installing trim.
 - b. As specified in Section 09 91 00.

3.3 PROTECTION

- A. Protect installed exterior synthetic trim to ensure that, except for normal weathering, trim will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 07 31 13 – ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Asphalt shingles.
 - 2. Underlayment.
 - 3. Ridge vents.
- B. Related Sections:
 - 1. Division 06 Section "Sheathing" for composite nail base insulated roof sheathing.
 - 2. Division 07 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, counterflashings and flashings.

1.3 DEFINITION

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 PREINSTALLATION MEETINGS

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

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For the following products, of sizes indicated, to verify color selected:
 - 1. Manufacturer's standard sample board showing product lines full range of colors.
- C. Qualification Data: For qualified Installer.
- D. Maintenance Data: For each type of asphalt shingle to include in maintenance manuals.
- E. Sample Warranty: For manufacturer's warranty

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain ridge and hip cap shingles, synthetic underlayment and self-adhering sheet underlayment from single source from single manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions.
- B. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.
- C. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.
- D. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended in writing by manufacturer.

1.9 WARRANTY

- A. Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Manufacturing defects.
 - b. Structural failures including failure of asphalt shingles to self-seal after a reasonable time.
 - 2. Material Warranty Period: Limited warranty for 50 year minimum from date of Substantial Completion, prorated, with first **10** years nonprorated.
 - 3. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 110 mph for 15 years from date of Substantial Completion.
 - 4. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 10 years from date of Substantial Completion.
 - 5. Workmanship Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance according to ASTM E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide TruDefinition Duration by Owens Corning or comparable product by one of the following:
 - a. CertainTeed Corporation, Landmark Pro.
 - b. GAF Materials Corporation, Timberline High Definition (HD).

- c. TAMKO Roofing Products, Inc., Heritage Premium.
- 2. Butt Edge: Straight cut.
- 3. Strip Size: Manufacturer's standard.
- 4. Algae Resistance: Granules treated to resist algae discoloration.
- 5. Color and Blends: As selected by Architect from manufacturer's full range.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226, Type II, asphalt-saturated organic felts, nonperforated.
- B. Synthetic Underlayment: UV-resistant polypropylene, polyolefin, or polyethylene polymer fabric with surface coatings or treatments to improve traction underfoot and abrasion resistance; evaluated and documented to be suitable for use as a roof underlayment under applicable codes by a testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Deck Defense by Owens Corning or comparable product by one of the following:
 - a. CertainTeed Corporation, Diamond Deck.
 - b. GAF Materials Corporation, Tiger Paw or Deck-Armor.
 - c. TAMKO Building Products, Inc., Synthetic Guard Plus.
- C. Self-Adhering Sheet Underlayment, Granular Surfaced (Ice Barrier): ASTM D 1970, minimum of 50-mil- thick sheet; glass-fiber-mat-reinforced, SBS-modified asphalt; mineral-granule surfaced; with release paper backing; cold applied.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide WeatherLock G by Owens Corning or comparable product by one of the following:
 - a. CertainTeed Corporation, WinterGuard (Granular Finish).
 - b. GAF Materials Corporation, Weather Watch.
 - c. TAMKO Building Products, Inc., Moisture Guard.
- D. Self-Adhering Sheet Underlayment, Polyethylene Faced (Ice Barrier): ASTM D 1970, minimum of 40-mil- thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide WeatherLock Flex by Owens Corning or comparable product by one of the following:
 - a. CertainTeed Corporation, WinterGuard (Sand Finish).
 - b. GAF Materials Corporation, Storm Guard.
 - c. TAMKO Building Products, Inc., TW Underlayment.

2.4 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch- diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.
 - 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. (Felt) Synthetic Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter.

2.5 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
 - 1. Sheet Metal: Aluminum with coated finishes.
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item.
 - 1. Apron Flashings: Fabricate with lower flange a minimum of 5 inches over and 4 inches beyond each side of downslope asphalt shingles and 6 inches up the vertical surface.
 - 2. Step Flashings: Fabricate with a headlap of 2 inches and a minimum extension of 4 inches over the underlying asphalt shingle and up the vertical surface.
 - 3. Cricket and Backer Flashings: Fabricate with concealed flange extending a minimum of 18 inches beneath upslope asphalt shingles and 6 inches beyond each side of chimney and 6 inches above the roof plane.
 - 4. Drip Edges: Fabricate in lengths not exceeding 10 feet with 2-inch roof-deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
- B. Single-Layer Felt Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides a minimum of 2 inches over underlying course. Lap ends a minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with felt underlayment nails.
 - 1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends of felt not less than 6 inches over self-adhering sheet underlayment.
 - 2. Install fasteners at no more than 36 inch o.c.
- C. Synthetic Underlayment: Install on roof deck not covered by self-adhering sheet underlayment. Install parallel with and starting at the eaves. Lap sides and ends and treat laps as recommended in writing by manufacturer. Stagger end laps between succeeding courses at interval recommended in writing by manufacturer. Fasten according to manufacturer's written instructions. Cover underlayment within period recommended in writing by manufacturer.

- D. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated below and on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.
 - 1. Prime concrete and masonry surfaces to receive self-adhering sheet underlayment.
 - 2. Eaves: Extend from edges of eaves 36 inches beyond interior face of exterior wall.
 - 3. Rakes: Extend from edges of rake 36 inches beyond interior face of exterior wall.
 - 4. Valleys: Extend from lowest to highest point 30 inches on each side.
 - 5. Hips: Extend 18 inches on each side.
 - 6. Ridges: Extend 36 inches on each side without obstructing continuous ridge vent slot.
 - 7. Sidewalls: Extend beyond sidewall 18 inches, and return vertically against sidewall not less than 4 inches.
 - 8. Dormers, Chimneys, Skylights, and Other Roof-Penetrating Elements: Extend beyond penetrating element 18 inches, and return vertically against penetrating element not less than 4 inches.
 - 9. Roof Slope Transitions: Extend 18 inches on each roof slope.
- E. Concealed, Closed-Cut Valley Lining: Comply with NRCA's recommendations. Install a 36-inch- wide strip of self-adhering underlayment centered in valley. Fasten to roof deck with felt underlayment nails.
 - 1. Lap roof-deck felt or synthetic underlayment over valley felt underlayment at least 6 inches.
 - 2. Install a 36-inch- wide strip of granular-surfaced valley lining centered in valley, with granular-surface face up. Lap ends of strips at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Fasten to roof deck with roofing nails.

3.3 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
 - 1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Step Flashings: Install with a headlap of 2 inches and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.
- D. Cricket and Backer Flashings: Install against the roof-penetrating element extending concealed flange beneath upslope asphalt shingles and beyond each side.
- E. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.
- F. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.
- G. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 ASPHALT SHINGLE INSTALLATION

- A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip at least 7 inches wide with self-sealing strip face up at roof edge.
 - 1. Extend asphalt shingles 3/4 inch over fasciae at eaves and rakes.
 - 2. Install starter strip along rake edge.

- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

- D. Fasten asphalt shingle strips with a minimum of five roofing nails located according to manufacturer's written instructions.
 - 1. Where roof slope exceeds 21:12, seal asphalt shingles with asphalt roofing cement spots after fastening with additional roofing nails.
 - 2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
 - 3. When ambient temperature during installation is below 50 deg F, seal asphalt shingles with asphalt roofing cement spots.

- E. Closed-Cut Valleys: Extend asphalt shingle strips from one side of valley 12 inches beyond center of valley. Use one-piece shingle strips without joints in valley. Fasten with extra nail in upper end of shingle. Install asphalt shingle courses from other side of valley and cut back to a straight line 2 inches short of valley centerline. Trim upper concealed corners of cut-back shingle strips.
 - 1. Do not nail asphalt shingles within 6 inches of valley center.
 - 2. Set trimmed, concealed-corner asphalt shingles in a 3-inch- wide bed of asphalt roofing cement.

END OF SECTION

SECTION 07 40 00 - METAL ROOF PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal roof panels.
- B. Underlayments, sealant for metal roofs, snow retention systems.

1.2 REFERENCES

- A. American Iron and Steel Institute (AISI), Specification for the Design of Cold-Formed Steel Structural Members (2008).
- B. American Institute of Steel Construction (AISC) Manual of Steel Construction (Current Edition).
- C. ASTM International (ASTM):
 - 1. ASTM A792 - Specification for Sheet Steel, Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - 2. ASTM E283 - Test Method for Rate of Air Leakage over Solid Substrate.
 - 3. ASTM E331 - Test Method for Rate of Water Penetration over Solid Substrate.
 - 4. ASTM E1680 - Test Method for Rate of Air Leakage over Open Framed Structure.
 - 5. ASTM E1646 - Test Method for Rate of Water Penetration over Open Framed Structure.
 - 6. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal and Siding Systems by Uniform Static Air Pressure Difference.
 - 7. ASTM E 2140: Water Penetration - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head
 - 8. ASTM E 1996/E 1886 - Large Missile Impact Test.
- D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
 - 1. Architectural Sheet Metal Manual.
- E. Underwriters Laboratory (UL) Roofing Materials and Systems Directory:
 - 1. Roofing Materials and Systems Directory listings and classifications of Underwriter's Laboratory roofing construction assemblies.

1.3 SYSTEM DESCRIPTION:

- A. The extent of each type of preformed metal roofing panel as indicated on the drawings shall include preformed metal roof panels, flashing required to weatherproof the system (ridge, hip, valley, cleat, eave, rake wall, rake edge, apron, inside corner, outside corner, gutter, downspout, drip sill, end wall, and other miscellaneous flashing), related accessories including but not limited to; underlayment, butyl tape, sealants used in conjunction with the roofing system, and necessary attachment hardware as required to meet the performance standards and complete the roofing system.
- B. Design Requirements:
 - 1. Continuous, one-piece, preformed, prefinished single length roof panels.
 - 2. Panels, clips, and other components required for specific project conditions.
 - 3. Manufacturer is responsible for providing evidence acceptable to Architect that manufacturer's roof system is capable of meeting thermal, wind uplift, and performance requirements specified.
- C. Thermal Movement:
 - 1. Complete metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
 - 2. Interface between panel and expansion clip shall provide for applicable thermal movement in each direction along longitudinal direction.

1.4 SUBMITTALS

- A. Shop Drawings Submittals:
 - 1. Manufacturer of the metal roof system shall provide complete shop drawings.
 - 2. Shop drawings shall be submitted and returned as approved/approved as noted prior to the beginning of product production.
- B. Product Data Submittals:
 - 1. Submit manufacturer's detailed product literature including the system profile sheet, system description including: material base-sheet gauge, seam height, panel on-center, finish, and sealant as required.
 - 2. Submit manufacturer's installation guidelines of the specified product.
- C. Submit a sample of each type of roof panel profile and a color sample. In the case where custom color is specified, submit a custom color chip for written approval and a standard color product sample for finish system review.
 - 1. Color Selection Samples: For each finish product specified, supply manufacturer's standard color chart with a minimum of 32 standard colors.
 - 2. Product Samples: For each product specified, provide a full width sample, associated clip (if required) and actual color chip of selected color.

1.5 QUALITY ASSURANCE

- A. Qualification of the Product Manufacturer:
 - 1. Manufacturer shall be a company specializing in Architectural Sheet Metal Products with at least twenty (10) years experience. Listing as a prequalified manufacturer does not release manufacturer from providing complete, current and acceptable test data for each performance, thermal, and wind load requirement specified for specific profile proposed.
 - 2. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.
- B. Qualification of Installers:
 - 1. Competent and skilled sheet metal applicator shall have at least three year experience applying these types of materials with successful completion of projects with similar scope.
 - 2. Installers shall be thoroughly trained and experienced in the necessary crafts and completely familiar with and comply with the recommendations and details of the manufacturer and the "Architectural Sheet Metal Manual" published by SMACNA.
 - 3. Installers shall follow the manufacturers' installation details without exception unless written authorization from the manufacturer and architect are provided on an installation detail revision. Detail revision authorization shall be made in advance of product installation.
- C. Mock-Up:
 - 1. The first 10 panels installed shall serve as a mock-up for A/E's approval of appearance. The sample area, when approved by A/E and Owner, shall become the project standard for appearance.

1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roof system components to project site in manufacturer's unopened original containers.
- B. Protect roof system components during shipment, storage, handling and erection from mechanical abuse, stains, discoloration and corrosion.

- C. Provide strippable plastic film on all painted surfaces between contact areas to prevent abrasion during shipping, storage and handling.
- D. Store materials off the ground, providing for drainage, under protective cover which allows for air circulation and protection from foreign material contamination, mechanical damage, cement, lime, or other corrosive materials.
- E. Handle materials to prevent damage to surfaces, edges and ends of roofing components. Damaged material shall be rejected and removed from site.
- F. Examine materials upon delivery to jobsite. Reject and remove physically damaged, stained or marred material from project site.
- G. Metal roof components with strippable film shall not be stored with exposure to direct sunlight.
- H. Stack material to prevent damage and allow for adequate ventilation and drainage.

1.8 PROJECT CONDITIONS

- A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for preformed metal roofing system.
- B. Protection:
 1. Provide protection or avoid traffic on completed roof surfaces.
 2. Do not overload roof with stored materials.
 3. Support no roof-mounted equipment directly on roofing system.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- B. Determine Work of other trades that penetrates the roof is coordinated by location, in place, and accepted prior to installation of roofing system.

1.10 WARRANTY

- A. Furnish manufacturer's Ten Year Finish Warranty against defective materials and fabrication.
- B. Furnish manufacturer's Twenty Year Finish Warranty stating that the architectural fluorocarbon coating will:
 1. Not crack, chip, peel or exhibit any other mechanical failure of paint to adhere to the substrate.
 2. Not exhibit fading or color change in excess of five hunter delta E units as determined by ASTM D2244-79.
 3. Not chalk in excess of a numerical rating of eight as determined by ASTM D4214-98.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Roof Panel Basis of Design: Dutch Seam from ATAS International, Inc.
- B. Subject to compliance requirements, products may be supplied by other manufacturers, including but not limited to the following:
 1. Pac-Clad Petersen Aluminum Corporation
 2. Berridge Manufacturing Co.
 3. DMI Dimensional Metals, Inc.

2.2 SHEET MATERIALS – GENERAL

- A. Finish shall be 70% PVDF fluorocarbon coating, applied on a continuous coil coating line, with top side dry film thickness of 1.1 +/- .01 mil dry film thickness and on the reverse side a wash coat and primer of .04 +/- .01 mil total dry film thickness.
 - 1. Basis of Design: Aluminum DynaClad: 3105 H14 alloy aluminum base sheet 0.040.
 - 2. Galvalume DynaClad: Consists of aluminum-zinc alloy coated (55% aluminum, 43.4% zinc, 1.6% silicon, nominal percentage by weight) carbon steel of commercial weight , 24 gauge.
- B. Finish color shall be selected by the Architect from the manufacturer's standard colors and metallic finishes. Unless otherwise noted all products shall be of the same finish and color.
- C. Strippable film shall be applied to the topside of the painted coil to protect the finish during fabrication, shipping and field handling. This strippable film shall be removed during installation.

2.3 METAL ROOFING SYSTEMS – GENERAL

- A. Standing seams shall incorporate a continuous engineered interlocking connection with concealed anchor clips.
- B. Panel clips shall be as recommended by the manufacturer to meet the performance criteria of this specification.
- C. All exposed adjacent flashing shall be of the same material and finish as the roof panels.
- D. Fasteners as recommended by manufacturer.
 - 1. Exposed fasteners shall be pre-painted to match roof with integrally bonded neoprene washers and/or gaskets.
 - 2. Exposed pop rivets shall be pre-painted to match the metal roof system.
 - 3. There shall be no exposed fasteners except to fasten flashing at fixing points, or for panel attachment as dictated by warranty requirements for longitudinal thermal expansion and contraction, or as indicated on the shop drawings.

2.4 FABRICATION

- A. Panels shall be fabricated on fixed base machines located within a permanent fabrication facility in continuous lengths as required. No horizontal end lap joints will be accepted, unless panels exceed 90 feet (27.5 m) in length or jobsite conditions dictate.
- B. Panel design shall incorporate concealed clips and fasteners. Exposed fasteners in roofing panels will not be accepted unless indicated on shop drawings.
- C. Standing seam design shall prevent water infiltration by utilizing a capillary break or continuous non-curing sealant to prevent siphoning.
- D. Fabricate roofing and related sheet metal work in accordance with approved shop drawings and applicable standards set forth in the Sheet Metal and Air Conditioning Contractors National Association - Architectural Sheet Metal Manual (seventh edition, 2012)
- E. Roofing and sheet metal flashing shall be fabricated in minimum 10 feet (3048 mm) lengths except as noted otherwise. Flashing shall have a minimum 3/4 inch (19 mm) hemmed edges in exposed locations. Provide field fabricated miters for components that change direction on the project.

2.5 METAL ROOF PANELS

- A. Basis of Design Product: Dutch Seam MRD150 as manufactured by ATAS International, Inc.
 - 1. Seam Height: 1-1/2inches.
 - 2. Seam On-Center: 15 inches, nominal.

3. Panel Profile: Smooth.
4. Material/Finish: .040 Aluminum with DynaClad PVDF finish.
5. Color: Dynaclad Matte Black (tsr = .25 sri = 24).
6. Minimum Slope: 2:12

2.6 SNOW RETENTION SYSTEMS

- A. Product: S-5 ColorGard bar type snow guard
 1. Non-penetrating mechanically clamped continuous snow retaining system including S-5 clamps, Versaclips, Snowclips, bar and color insert shall match metal roof.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine alignment and placement of building roof structure before proceeding with installation of preformed metal roofing.
- B. Examine metal roof deck before starting installation. Deck shall be clear, clean and smooth, free of depressions, waves, or projections, dry and shall remain dry and free of ice and snow, after roofing application commences. Deck flutes shall be clean and dry.
- C. Field check dimensions and check support alignment with taut string or wire. Support misalignment may cause additional stresses in the panels and contribute to oil canning.
- D. Do not proceed with installation until conditions are satisfactory. Notify the architect in writing of unsatisfactory conditions.
- E. Underlayment Installation:
 1. Verify that underlayment has been installed over solid substrate.
 2. Ensure underlayment is installed horizontally, starting at the eave working to the ridge with 6 inches (152 mm) minimum overlap.
 3. Ensure that all fasteners are totally flush with the substrate.

3.2 INSTALLATION

- A. General Requirements:
 1. Install metal panels and flashing in accordance with approved shop drawings and manufacturer's product data, within specified tolerances.
 2. Isolate dissimilar metals, masonry and concrete from metal roof system with bituminous coating.
 3. Anchorage shall allow for thermal expansion and contraction without stress or elongation of panels, clips or anchors.
 4. Coordinate flashing and sheet metal work to provide watertight conditions at roof terminations. Fabricate and install in accordance with standards set forth in the SMACNA Manual using continuous cleats at all exposed edges.
- B. Underlayment:
 1. Install proper protection to finished substrate to prevent moisture infiltration to roofing assembly prior to placement of panels. Cover complete roof area to receive metal roof panels with manufacturer's recommended material.
- C. Preformed Metal Roof Panels:
 1. Fasten anchor clips with fasteners as recommended by the manufacturer as required to meet the performance criteria specified.
 2. Install starter and edge trim before installing roof panels.
 3. Remove strippable plastic film prior to installation of roof panels.
 4. Erect metal roofing with lines, planes, rises and angles sharp and true, and plane surfaces free from objectionable warp, dents, buckle or other physical defects.

5. Do not allow traffic on completed roof.
6. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
7. Remove and replace any panels or flashing components that are damaged beyond successful repair.

D. Flashing:

1. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations for installation work where the manufacturer's approved shop drawings do not define a specific detail.
2. Conceal fasteners and expansion provisions wherever possible.
3. Hem all exposed edges of sheet metal flashing that are exposed with at least 3/4 inch (19 mm) fold under.
4. Insert metal flashing into reglets, anchor with wedges and seal all joints.
5. Set sheet metal items level, true to line and plumb.
6. Secure all metal flashing to wood nailers with screws as indicated on the approved shop drawings.
7. Use cleats to keep flashing end laps closed when face width exceeds 8 inches (203 mm).

3.3 FIELD QUALITY CONTROL

A. Tolerances:

1. Applicable erection tolerances: Maximum variation from true planes or lines shall be 1/4 inch (6 mm) in 20 feet (6.1 m) or 3/8 inch (9.5 mm) in 40 feet (12.2 m).
2. Metal roof systems cannot correct any previously installed support or wood nailer problems that do not meet the above tolerances.

B. Manufacturer's Field Service:

1. Manufacturer's representative shall inspect all Watertight Warranted projects during the installation of the metal roof system.
2. Inspections shall be scheduled as required by the manufacturer of the roofing system.
3. Two mandatory visits are required:
 - a. Inspection of proper panel and flashing installation.
 - b. Final inspection upon completion of the metal roof installation.
4. Upon final inspection a report will be issued to the installer of any discrepancies and requirements for additional work. If additional work required the manufacturer will provide another final inspection to verify acceptance of completed work.

3.4 CLEANING

- A. Clean exposed surfaces of work promptly after completion of installation. To prevent rust from staining the painted finish, immediately remove filings produced by drilling or cutting.
- B. Clean roof in accordance with manufacturer's recommendations.
- C. Touch up minor abrasions and scratches in finish with the manufacturer's supplied PVDF touch up paint.
- D. Remove all scrap and construction debris from the site.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Manufactured Products.
 - 2. Formed Products:
 - a. Formed roof drainage sheet metal fabrications.
 - b. Formed equipment support flashing.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
- B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
 - 1. Identification of material, thickness, weight, and finish for each item and location in Project.
 - 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 - 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 4. Details of termination points and assemblies, including fixed points.
 - 5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
 - 6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
 - 7. Details of special conditions.
 - 8. Details of connections to adjoining work.
 - 9. Detail formed flashing and trim at a scale of not less than 3 inches per 12 inches.
- C. Samples for Color Selection and Verification of Material Thickness: For each type of sheet metal flashing, trim, and accessory indicated provide a minimum 4 inch by 6 inch sample with factory-applied color finishes.
- D. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.

- E. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
- C. Preinstallation Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
 - 2. Review methods and procedures related to sheet metal flashing and trim.
 - 3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
 - 4. Review special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal flashing.
 - 5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.6 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. Exposed Coil-Coated Finishes:
 - a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Colors: To be determined. Architect to select from manufacturer's full color range.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; with smooth, flat surface.
 - 1. Finish: 2B (bright, cold rolled).

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- G. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.3 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant.
- D. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
- H. Do not use graphite pencils to mark metal surfaces.

2.4 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Gutters:
1. Prefinished aluminum or galvalume sheet, .032 thickness
 2. Rectangular "box" gutters sized as indicated on drawings, complete with end pieces, outlet tubes, and other special pieces as required for a complete installation.
 3. Furnish gutter supports spaced a maximum of 24 inches o.c., fabricated from same metal as gutters, integrate with roof finish/protection installation.
 4. Use continuous, unbroken lengths of gutter where possible.
- B. Downspouts:
1. Prefinished aluminum or galvalume sheet, .032 inch thickness min.
 2. Rectangular, smooth downspouts sized as indicated on drawings, complete with elbows, transitions and other special pieces as required for a complete installation.
 3. Straps and brackets of the same material as downspouts.
- C. Drip Edges and Splash Pans: Fabricate from the following materials:
1. Prefinished aluminum sheet or galvalume sheet; 0.028 inch thickness min.

2.5 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Coil-Coated Aluminum or Galvalume Sheet Finish:
 - 1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.019 ± 0.0013 mm) over 0.2 ± 0.05 mil (0.05 ± 0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 ± 0.0025 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Color: To be selected by Architect from manufacturer's full color range (minimum 24 colors).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
 - 5. Install sealant tape where indicated.
 - 6. Torch cutting of sheet metal flashing and trim is not permitted.
 - 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
 - 1. Coat back side of uncoated aluminum sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.

- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate substrates.
 - 1. For wood sheathing, nails shall not be less than 1-1/4 inches long and wood screws not less than 3/4 inches long.
 - 2. For metal stud, decking or other metal substrate, use sizes not less than recommended by fastener manufacturer to achieve maximum pull out resistance.
- E. Seal joints as shown and as required for watertight construction.
 - 1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 - 2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."
- F. Rivets: Rivet joints in uncoated aluminum where indicated and where necessary for strength.

3.3 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Downspouts: Join sections with 1-1/2-inch telescoping joints.
 - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c. in between.
 - 2. Provide elbows at base of downspout to direct water onto splash pans.
- C. Conductor Heads: Anchor securely to wall with elevation to capture ends of downspouts.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- C. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric and butyl sealant and clamp flashing to pipes that penetrate roof.

3.5 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

3.6 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.7 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean off excess sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturers written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 1. Silicone joint sealants.
 2. Urethane joint sealants.
 3. Latex joint sealants.
 4. Acoustical joint sealants.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 2. Interpretation of test results and written recommendations for primers and substrate preparation needs for adhesion.
- D. Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Qualified to perform work specified by reason of relevant experience or training provided by product manufacturer.
- B. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.
- C. Preinstallation Conference: Conduct conference at Project site.

1.5 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty for Exterior Joints: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):
 1. Architectural Sealants: 250 g/L.
 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- D. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- E. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

- A. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Omniplus.
 - b. Dow Corning Corporation; 786 Mildew Resistant.
 - c. GE Advanced Materials - Silicones; Sanitary SCS1700.
 - d. Tremco Incorporated; Tremsil 200 Sanitary.

2.3 URETHANE JOINT SEALANTS

- A. Multicomponent, Nonsag, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Pecora Corporation; Dynatrol II.
 - b. Tremco Incorporated; Dymeric 240 or Dymeric 240 FC.
- B. Multicomponent, Nonsag, Traffic-Grade, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 25, for Use T.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Sonolastic NP 2.
 - b. Pecora Corporation; Dynatred.
 - c. Sika Corporation, Construction Products Division; Sikaflex - 2c NS.
 - d. Tremco Incorporated; Vulkem 227.

2.4 LATEX JOINT SEALANTS

- A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Sonolac.
 - b. Pecora Corporation; AC-20+.
 - c. Tremco Incorporated; Tremflex 834.

2.5 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint- sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
 - d. Exterior insulation and finish systems.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
 - 4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
 - 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces JS-1.
 - 1. Joint Locations:
 - a. Isolation and contraction joints in cast-in-place concrete slabs.
 - b. Joints between different materials listed above.
 - c. Other joints as indicated.
 - 2. Urethane Joint Sealant: Multicomponent, nonsag, traffic grade, Class 25.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces JS-2.
 - 1. Joint Locations:
 - a. Construction joints in cast-in-place concrete.
 - b. Joints in exterior insulation and finish systems.
 - c. Joints between metal panels.
 - d. Joints between different materials listed above.
 - e. Perimeter joints between materials listed above and frames of doors, windows, and louvers.
 - f. Other joints as indicated.
 - 2. Urethane Joint Sealant: Multicomponent, nonsag, Class 50.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- C. Joint-Sealant Application: Interior joints in horizontal traffic surfaces JS-3.
 - 1. Joint Locations:
 - a. Isolation joints in cast-in-place concrete slabs.
 - b. Control and expansion joints in tile flooring.
 - c. Other joints as indicated.
 - 2. Urethane Joint Sealant: Multicomponent, nonsag, traffic grade, Class 25.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces JS-4.
 - 1. Joint Locations:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints of exterior openings where indicated.
 - c. Tile control and expansion joints.
 - d. Vertical joints on exposed surfaces of walls and partitions.
 - e. Perimeter joints between interior wall surfaces and frames of interior doors and windows .
 - f. Other joints as indicated.
 - 2. Joint Sealant: Latex or Acrylic based.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces JS-5.
 - 1. Joint Sealant Location:
 - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - b. Tile control and expansion joints where indicated.
 - c. Other joints as indicated.
 - 2. Joint Sealant: Single component, nonsag, mildew resistant, acid curing.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION

SECTION 08 16 13 - FIBERGLASS ENTRY DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fiberglass Entry Doors

1.2 RELATED SECTIONS

- A. 06 65 00 – Synthetic Trim
- B. 07 92 00 – Joint Sealants
- C. 08 71 00 – Door Hardware
- D. 09 90 00 – Painting and Coating

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 1. ASTM E 90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
 2. ASTM E 283 – Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen.
 3. ASTM E 330 – Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 4. ASTM E 331 – Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
 5. ASTM E 547 – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
 6. ASTM E 1300 – Standard Practice for Determining Load Resistance of Glass in Buildings.
 7. ASTM E 1332 – Standard Classification for Determination of Outdoor-Indoor Transmission Class.
 8. ASTM E 2235 – Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods.

1.4 SUBMITTALS

- A. Product Data: Submit door manufacturer current product literature, including installation instructions.
- B. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections, anchorage methods and locations, accessories, hardware locations, and installation details.
- C. Samples: Submit full-size or partial full-size verification sample of door illustrating quality of construction, texture, and color of finish.

1.5 QUALITY ASSURANCE

- A. Quality Assurance Submittals:
 1. Provide documentation for specified performance as required.
 2. Manufacturers' installation instructions.
- B. Manufacturer Qualifications: Manufacturer shall have successful experience in producing the

type of product required for project applications equivalent to the requirements for this project.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site undamaged with labels clearly identifying manufacturer, product name, and installation instructions
- B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.
- C. Handling: protect materials and finish during handling and installation to prevent damage.

1.7 WARRANTY

- A. Therma-Tru standard limited warranty for fiberglass Therma-Tru Door Product and genuine Therma-Tru components, including rot-resistant frames, mullions, and brickmould sourced from Therma-Tru (excluding primed pine door frames and oak door frames, and non-rot resistant mullions and brickmould) will be free from material and workmanship defects for a period of three years subject to certain limitations and restrictions. For complete details and current warranty information go to www.thermatru.com.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis of design:
 - 1. Therma-Tru Corp., www.thermatru.com
 - 2. Subject to compliance requirements, review and approval, products may be supplied by other manufacturers.

2.2 FIBERGLASS ENTRY DOORS

- A. Fiberglass Entry Doors: All fiberglass doors manufactured by Therma-Tru. Specification is for complete entry systems with components manufactured by Therma-Tru and assembled by independent fabricators.
 - 1. Classic-Craft "Artissa" CCR100 and CCR8100
 - a. 3/32" minimum thickness proprietary fiberglass reinforced thermoset composite, "AccuGrain" textured to duplicate hand-crafted hardwood master or smooth surface.
 - b. Door edges are machinable kiln-dried hardwood, flush and square with door faces, lock edge reinforced with full-length integrated 3-1/2-inch wide engineered lumber core.
 - c. Door bottom edge is moisture- and decay-resistant composite.
 - d. Core is foamed- in-place polyurethane, with a minimum density of 1.9 pcf.
- B. Frames: Provided and assembled by third party fabricators to exacting specifications from Therma-Tru to help maximize system performance. Therma-Tru strongly recommends the use of rot-resistant frames, mullions, and brickmould sourced from Therma-Tru.
 - 1. Milled from 5/4 kiln-dried material with profiled 1/2" stop and 6 degree sill gain prep.
 - 2. Jamb Width: 5 1/4"
 - 3. Rot Resistant – frames, mullions, and brickmould sourced through Therma-Tru.
- C. Sills
 - 1. Public Access Sill, Bronze finish

2.3 HARDWARE

- A. Hinges: Steel, ball bearing 4 x 4 x 0.098 inches finished to match hardware, plated screws to match
 - 1. Finish: US17A, black nickel
 - 2. Decorative strap hinges to exterior.

- B. Locking Hardware:
 - 1. Multi-point lock system includes stainless steel face plate.
 - 2. Multi-point lock system handle set hardware: Venture (basis of design, final selection TBD)
 - 3. Finish: US17A, black nickel

2.4 INSTALLATION ACCESSORIES

- A. Sill pan
- B. Corner seal pad
- C. Rain deflector
- D. Rain Guard

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive doors. Notify Architect in writing any unacceptable conditions that would adversely affect installation or subsequent performance of the product. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Install fiberglass doors in full compliance with manufacturer's written instructions and approved shop drawings.

- B. Maintain alignment and compatibility with adjacent work.

3.3 FINISHING

- A. Finish in compliance with manufacturer's written recommendations.

3.3 Protection

- A. Protect installed products until completion of project.

- B. Touch-up, repair or replace damaged products prior to Substantial Completion in accordance with manufacturer's written recommendations.

END OF SECTION

SECTION 08 71 00 - DOOR HARDWARE

1.1 SUMMARY

- A. This Section includes items known commercially as finish door hardware that are required for swing doors.

1.2 Contractor's responsibilities shall be as follows:

- A. Submittals: Coordinate and process submittals for door hardware in same manner as submittals for other work. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
 - 1. Product Data: For each type of product indicated.
 - 2. Shop Drawings: Details of door hardware.
 - 3. Samples: For each exposed finish.
 - 4. Door Hardware Sets: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams.
 - a. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
 - b. Identification number, location, hand, fire rating, and material of each door and frame.
 - c. Type, style, function, size, quantity, and finish of each door hardware item. Include description and function of each lockset and exit device.
 - d. Complete designations of every item required for each door or opening including name and manufacturer.
 - 5. Keying Schedule: Prepared by or under the supervision of Architectural Hardware Consultant, detailing Owner's final keying instructions for locks.
- B. Construction Schedule: Cooperate with door hardware supplier in establishing scheduled dates for submittals and delivery of templates and door hardware. Incorporate in construction schedule the times and dates related to furnishing hardware by the door supplier.
- C. Coordination: Coordinate door hardware with other Work. Furnish hardware supplier or manufacturer with shop drawings of other work where required or requested. Verify completeness and suitability of hardware with supplier.
- D. Product Handling: Provide secure lock-up for hardware delivered to the site. Inventory hardware jointly with representative of hardware supplier and issue signed receipts for all delivered materials.
- E. Installation Information: The general types and approximate quantities of hardware required for this Project are indicated at the end of this Section in order to establish Contractor's costs for installation and other work not included in allowance.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.
- B. Delivery, Storage, and Handling:
 - 1. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
 - 2. Tag each item or package separately with identification related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.
- C. Coordination:
 - 1. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm

that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

2. Existing Openings: Where new hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide for proper operation.

D. Maintenance Service

1. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and replacement of door hardware.

1.4 PRODUCTS

A. General: Provide door hardware for each door to comply with requirements in these Specifications and door hardware sets indicated in Drawings.

1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturer's products, if included.

B. Hinges

1. Butts and Hinges: BHMA A156.1. Listed under Category A in BHMA's "Certified Product Directory."
2. Screws: Provide Phillips flat-head screws complying with the following requirements:
 - a. For metal doors and frames install machine screws into drilled and tapped holes.
 - b. For wood doors and frames install wood screws.
 - c. Finish screw heads to match surface of hinges or pivots.
3. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Out-Swing Exterior Doors: Nonremovable pins.
 - b. Tips: Flat button and matching plug, finished to match leaves, except where hospital tip (HT) indicated.
4. 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.

C. Locks and Latches, General

1. Accessibility Requirements: Where indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."
 - a. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22N).
2. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf (67 N) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

D. Mechanical Locks and Latches

1. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:
 - a. Bored Locks: BHMA A156.2.
 - b. Mortise Locks: BHMA A156.13.
 - c. Interconnected Locks: BHMA A156.12.
2. Mortise Locks: Stamped steel case with steel or brass parts; BHMA A156.13, Grade 1; Series 1000. Listed under Category F in BHMA's "Certified Product Directory."
3. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set, unless otherwise indicated.
4. Lock Throw: Provide 5/8-inch minimum throw of latch on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

- E. Closers
 - 1. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."
 - 2. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.
- F. Stops and Holders
 - 1. Mechanical Door Holders: BHMA A156.16, Grade 1 unless Grade 2 is indicated.
 - 2. Combination Floor and Wall Stops and Holders: BHMA A156.8, Grade 1 unless Grade 2 is indicated.
 - 3. Combination Overhead Stops and Holders: BHMA A156.8, Grade 1 unless Grade 2 is indicated.
- G. Door Gasketing
 - 1. Standard: BHMA A156.22. Listed under Category J in BHMA's "Certified Product Directory."
 - 2. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
 - a. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - b. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
 - c. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
 - 3. Air Leakage: Not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.
 - 4. Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke-control ratings indicated, based on testing according to UL 1784.
 - a. Provide smoke-labeled gasketing on 20-minute-rated doors and on smoke-labeled doors.

1.5 INSTALLATION:

- A. 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.
 - 1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
 - 2. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."
- 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.
- C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Set thresholds for exterior doors in full bed of butyl-rubber or mastic sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

1.6 ADJUSTING, CLEANING, AND DEMONSTRATING:

- A. 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.

END OF SECTION

SECTION 09 91 00 – PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following exterior substrates:
 1. Concrete and Asphalt.
 2. Clay masonry.
 3. Concrete masonry units (CMU).
 4. Steel.
 5. Galvanized metal.
 6. Wood.
 7. Plastic trim fabrications.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of paint system and each color and gloss of topcoat indicated.
 1. Submit Samples on rigid backing, 8 inches square.
 2. Step coats on Samples to show each coat required for system.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- C. Product List: For each product indicated, include the following:
 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.5 PROTECTION

- A. Place paint or solvent-soaked rags, waste, or other materials which might constitute a fire hazard in metal containers and remove from premises at the close of each day's work. Take every precaution to avoid damage by fire.
- B. Provide foam type 2-1/2 gallon capacity fire extinguishers for each paint storage space.

- C. Protect the work of all other trades against damage, marking or injury by suitable covering during the progress of the painting and finishing work.

1.6 PROJECT CONDITIONS

- A. Examine all surfaces to receive coatings and report to the Architect/Engineer any condition which is not acceptable. Commencement of work in any area constitutes acceptance of conditions and places the responsibility for a workmanlike job on this Section.
- B. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- C. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance requirements, products may be supplied by other manufacturers, including, but not limited to, the following:
 1. Sherwin Williams Company
 2. Benjamin Moore & Co.
 3. Pratt and Lambert
 4. Sika
 5. BASF

2.2 PAINT, GENERAL

- A. Material Compatibility:
 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. Colors: As selected by Architect from manufacturer's full range

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Concrete: 12 percent.
 2. Masonry (Clay and CMU): 12 percent.
 3. Wood: 15 percent.
 4. Plaster: 12 percent.

- 5. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
 - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Concrete/Masonry Substrates: Prepare surfaces of concrete and masonry to be painted by using approved cleaning solvents and high-pressure power washing with minimum pressures of 2,500 to 5,000 PSI at a flow of 4 to 14 gallons per minute in accordance with SSPC SP1 to thoroughly remove all efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze, or provide sufficient bite on existing painted surfaces. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
- F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- G. Aluminum Substrates: Remove surface oxidation.
- H. Miscellaneous Existing Metals:
 - 1. For existing metal being restored, power wash using approved cleaning solvents and minimum pressures of 2,500 to 5,000 PSI at a flow of 4 to 14 gallons per minute in accordance with SSPC-WJ4. Mechanical abrasion may be needed in order to ensure adhesion (i.e.sanding or powerwashing with sand injection)
 - 2. For all other existing metals scheduled to be painted, sandblast clean to SSPC-SP6 or power tool according to SSPC SP 15 Commercial Grade Power Tool Cleaning.
- I. Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.

4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 5. Apply wood filler paste to open-grain woods, as defined in "MPI Architectural Painting Specification Manual," to produce smooth, glasslike finish.
- J. Synthetic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.
- K. Plaster Substrates: Do not begin paint application until plaster is fully cured and dry.
- L. Exterior Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.
- M. Asphalt Pavement Substrates: Asphalt must be cured to extent permitted by the manufacturer.

3.3 MATERIALS PREPARATION

- A. Mix and prepare painting materials in strict accordance with the manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir all materials before application to produce a mixture of uniform density, and as required during the application of the materials.

3.4 APPLICATION

- A. Apply paints according to manufacturer's written instructions, employing technically trained personnel.
 1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. The number of coats and paint film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has completely dried. Sand between each enamel coat application with fine sandpaper, or rub surfaces with pumice stone where required to produce an even, smooth surface in accordance with the coating manufacturer's directions.
- D. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- E. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- F. Minimum dry film thickness shall be 6.0-8.0 mils per coat.
- G. Verify dry film thickness of completed surfacing system in the field, at random, using a Tooke Inspection Gauge. Minimum thickness shall be as specified excluding foundation or fill coats. Conduct tests in presence of Engineer or his representative.
- H. Finished work shall match approved samples; be uniform in sheen, color and texture and be free from defects detrimental to appearance or performance.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 PAINTING SCHEDULE

- A. Concrete Coatings (Breathable)
 - 1. Primers/Fillers
 - a. Master Protect FL 749 as manufactured by BASF
 - b. Sikagard 552W Primer or SikaLatex R as manufactured by Sika Corporation
 - c. One coat, 2.0-3.0 mils dft
 - 2. Top Coat/Finish Coat
 - a. MasterProtect HB 200 LR as manufactured by BASF
 - b. Sikagard 670W as manufactured by Sika Corporation
 - c. Multiple top coats may be required to achieve 4.5-5.5 mils dft
- B. CMU (and Clay Masonry) Substrates:
 - 1. Latex System (Existing Substrates) :
 - a. Prime Coat: One coat Loxon Masonry Primer A24W300 Block Surfacers 16 mils WFT/8 mils DFT.
 - b. Topcoats: Two coats A-100 satin 4 mils WFT/1.3 mils DFT per coat.
 - 2. Latex Over Alkali – Resistant Primer System (New Substrates):
 - a. Prime Coat: One coat Loxon A24W200 Block Surfacers 16 mils WFT/8 mils DFT.
 - b. Topcoats: Two coats A-100 satin 4 mils WFT/1.3 mils DFT per coat.
- C. Steel Substrate:
 - 1. Alkyd System:
 - a. Prime Coat: One coat Pro-Cryl Universal Water Based Primer B66-310 series 6 mils WFT/3 mils DFT.
 - b. Topcoats: Two coats Pro Industrial Enamel 100 B54 WZ Series gloss 6 mils WFT/2 mils DFT per coat.
 - 2. High Performance Polyurethane, Pigmented Coating System:
 - a. Prime Coat: One coat Pro-Cryl Universal Water Based Primer B66-310 series 5 mils WFT/2 mils DFT.
 - b. Topcoats: Two coats HydroGloss Single Component Water Based Urethane B65-181 series gloss 6 mils WFT/2 mils DFT per coat.
- D. High Performance Coating for Structural Steel:
 - 1. Primer (bare metal locations same day as surface preparation)
 - a. Macropoxy 646 , Sherwin Williams
 - 2. High Build Epoxy
 - a. Macropoxy 646; Sherwin Williams
(two coats, 3.0-5.0 mils dft then 4.0-6.0 mils dft)
 - 3. Gloss Aliphatic Urethane Finish
 - a. Acrolon 218 HS; Sherwin Williams

(one coat, 3.0-5.0 mils dft)

- E. Galvanized and Galvannealed Metal Substrates:
 - 1. Latex Over Water-Based Primer System:
 - a. Prime Coat: One coat Pro-Cryl Universal Water Based Primer B66-310 series 5 mils WFT/2 mils DFT.
 - b. Topcoats: Two coats Sher-Cryl B66-300 series semi-gloss 6 mils WFT/2.5 mils DFT per coat.
 - 2. High Performance Polyurethane Pigmented Coating:
 - a. Prime Coat: One coat DTM Wash Primer B71Y1 3.4 mils WFT/0.7 mils DFT.
 - b. Topcoats: Two coats HydroGloss Single Component Water Based Urethane B65-181 series gloss 6 mils WFT/2 mils DFT per coat.
- F. Aluminum Substrates:
 - 1. Latex Systems:
 - a. Prime Coat: One coat Pro-Cryl Universal Water Based Primer B66-310 series 5 mils WFT/2 mils DFT.
 - b. Topcoats: Two coats Sher-Cryl B66-300 series semi-gloss 6 mils WFT/2.5 mils DFT per coat.
- G. Wood Substrates:
 - 1. Latex System:
 - a. Prime Coat: One coat A-100 Latex Primer Y24 series 4 mils WFT/2.3 mils DFT.
 - b. Topcoats: Two coats A-100 satin 4 mils WFT/1.3 mils DFT per coat.
- H. Synthetic Trim Fabrication Substrates:
 - 1. Latex System:
 - a. Topcoats: Two coats Duration satin 7 mils WFT/2.8 mils DFT per coat.
- I. Stucco Substrates:
 - 1. Latex Systems (Existing Substrate):
 - a. Prime Coat: One coat Loxon Masonry Primer A24W300 8 mils WFT/3.2 mils DFT.
 - b. Topcoats: Two coats A-100 satin 4 mils WFT/1.3 mils DFT per coat.
 - 2. Latex Over Alkali-Resistant Primer System (New Substrates):
 - a. Prime Coat: One coat Loxon A24W200 Block Surfacer 16 mils WFT/8 mils DFT.
 - b. Topcoats: Two coats A-100 satin 4 mils WFT/1.3 mils DFT per coat.

END OF SECTION

Portage Park District

TOWNER'S WOODS

BRADY SWITCH TOWER REPAIRS

PREVAILING WAGE PACKAGE

May 25, 2023

Prevailing Wage Determination Cover Letter

County: Portage

Determination Date: 02/15/2023

Expiration Date: 05/15/2023

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

PREVAILING WAGE THRESHOLD LEVELS

IMPORTANT NOTICE

Before advertising for bids, contracting, or undertaking construction with its own forces, to construct a public improvement, the Public Authority shall have the Ohio Department of Commerce-Division of Industrial Compliance, Bureau of Wage and Hour Administration determine the prevailing rates of wages for workers employed on the public improvement. The wage determination must be included in the project specifications and printed on the bidding blanks where work is done by contract.

“New” construction threshold for <i>Building Construction</i>:	\$250,000
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“Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting” threshold level for <i>Building Construction</i>:	\$75,000
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As of January 1, 2022:

“New” construction that involves <i>roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction</i> threshold level has been adjusted to:	\$96,091
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“Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting” that involves <i>roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction</i> threshold level has been adjusted to:	\$28,789
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- A) Thresholds are to be adjusted biennially by the Director of the Ohio Department of Commerce.
- B) Biennial adjustments to threshold levels are made according to the Building Cost for Skilled Labor Index published by McGraw-Hill’s Engineering News-Record, but may not increase or decrease more than 3% for any year.

If there are questions concerning this notification, please contact:

Ohio Department of Commerce
Division of Industrial Compliance
Bureau of Wage and Hour Administration
6606 Tussing Road, PO Box 4009
Reynoldsburg, Ohio 43068-9009
Phone: 614-644-2239
Fax: 614-728-8639
www.com.ohio.gov

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.

Note: The use of this particular form is not mandatory, employers may submit their own forms that are approved by the public authority contracting for the project, provided that all of the required information is included.

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.

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; MT WTHFSS. 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 maybe paid in entirety in the base rate to the employee; in which case, the cash designation will be checked for fringe benefits.
- Total rate maybe paid as listed in prevailing wage rate schedule with total fringe amounts paid approved plans.
- Total rate maybe 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.

Certified Payroll Report

Report for: Check if Subcontractor¹⁾ Contract No: _____ Payroll No: _____
 Company:¹⁾ _____ If Sub, GC/Prime Contractor Name: _____
 Address: _____ Project Name & Location: _____ Week Ending: _____
 City, State, Zip _____ Public Authority (Owner): _____
 Phone No: _____ Sheet:²⁾ _____ of _____

1. Employee Name, Address, & SS# (Last 4 digits if permitted)	2. Work Class ³⁾	3. Prevailing Wage Project Hours Worked - Day & Date							4. Total Hours	5. Base Rate	6. Project Gross	7. Fringes: <input type="checkbox"/> Cash <input type="checkbox"/> Approved Plans <input type="checkbox"/> Cash & Approved Plans						Weekly Payroll Amount			
												Fringe Rate Your Company Pays Per Hour						8. Total Hrs for all Jobs	9. Total Gross on All Jobs	10. Total Deductions	11. Net Pay on All Jobs
		H&W	Pens	Vac	Hol	Other	Total														
		OT																			
		ST																			
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1) By signing below, I certify that: (1) I pay, or supervise the payment of the employees shown above; (2) during the pay period reported on this form, all hours worked on this project have been paid at the appropriate prevailing wage rate for the class of work done; (3) the fringe benefits have been paid as indicated above; (4) no rebates or deductions have been or will be made, directly or indirectly from the total wages earned, other than permissible deductions as defined in ORC Chapter 4115; and (5) apprentices are registered with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training. I understand that the willful falsification of any of the above statements may subject the Contractor or Subcontractor to civil or criminal prosecution.

Type or Print Name and Title _____ Signature _____ Date _____



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: Bricklayer Local 23 (Cleveland Zone 2 Tile Finisher)

Change # : LCN01-2023ibLoc23ClevZone2TF

Craft : Bricklayer 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												
Bricklayer Tile Finisher	\$26.19		\$9.14	\$3.83	\$0.62	\$0.00	\$1.75	\$0.00	\$0.00	\$0.00	\$41.53	\$54.63
Apprentice	Percent											
1st 6 months	60.00	\$15.71	\$9.14	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$24.85	\$32.71
2nd 6 months	70.00	\$18.33	\$9.14	\$3.83	\$0.62	\$0.00	\$1.75	\$0.00	\$0.00	\$0.00	\$33.67	\$42.84
3rd 6 months	75.00	\$19.64	\$9.14	\$3.83	\$0.62	\$0.00	\$1.75	\$0.00	\$0.00	\$0.00	\$34.98	\$44.80
4th 6 months	80.00	\$20.95	\$9.14	\$3.83	\$0.62	\$0.00	\$1.75	\$0.00	\$0.00	\$0.00	\$36.29	\$46.77
5th 6 months	85.00	\$22.26	\$9.14	\$3.83	\$0.62	\$0.00	\$1.75	\$0.00	\$0.00	\$0.00	\$37.60	\$48.73
6th 6 months	90.00	\$23.57	\$9.14	\$3.83	\$0.62	\$0.00	\$1.75	\$0.00	\$0.00	\$0.00	\$38.91	\$50.70

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 :

- 1-4 Journeymen to 1 Apprentice
- 5-10 Journeymen to 2 Apprentices
- 11-16 Journeymen to 3 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

PORTAGE, SUMMIT

Special Jurisdictional Note :

Details :

The rate of Sewer Bricklayer will be \$.50 cents per above the building bricklayer's rate. Men working from cable or rope hung scaffold shall receive .50 cents per hour above building bricklayer rate.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Cleveland Zone 2 Tile Layer)

Change # : LCN01-2023ibLoc23ClevZone2TL

Craft : Bricklayer 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												
Bricklayer Tile Layer	\$32.05		\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$47.25	\$63.27
Tile Layer Apprentice	Percent											
1st 30 days	60.00	\$19.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.23	\$28.84
1st 6 months	60.00	\$19.23	\$9.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.43	\$38.04
2nd 6 months	65.00	\$20.83	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$36.03	\$46.45
3rd 6 months	70.00	\$22.43	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$37.64	\$48.85
4th 6 months	75.00	\$24.04	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$39.24	\$51.26
5th 6 months	80.00	\$25.64	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$40.84	\$53.66
6th 6 months	85.00	\$27.24	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$42.44	\$56.06
7th 6 months	90.00	\$28.84	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$44.05	\$58.47
8th 6 months	95.00	\$30.45	\$9.20	\$3.83	\$0.67	\$0.00	\$1.50	\$0.00	\$0.00	\$0.00	\$45.65	\$60.87

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 :

- 1-4 Journeyman to 1 Apprentice
- 5-10 Journeymen to 2 Apprentice
- 11-16 Journeymen to 3 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

PORTAGE, SUMMIT

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Cleveland Marble Mason)

Change # : LCN01-2023ibLoc23ClevMarMas

Craft : Bricklayer Effective Date : 05/24/2023 Last Posted : 05/24/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Horizontal Marble Mason	\$27.10		\$9.85	\$9.45	\$0.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.07	\$60.62
Masonry Maintenance Specialist	\$13.55		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$13.55	\$20.33
Apprentice	Percent											
1st 6 Months	60.00	\$16.26	\$9.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.11	\$34.24
2nd 6 Months	65.00	\$17.62	\$9.85	\$1.60	\$0.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.74	\$38.54
3rd 6 Months	70.00	\$18.97	\$9.85	\$9.45	\$0.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.94	\$48.42
4th 6 Months	75.00	\$20.33	\$9.85	\$9.45	\$0.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.30	\$50.46
5th 6 Months	80.00	\$21.68	\$9.85	\$9.45	\$0.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.65	\$52.49
6th 6 Months	85.02	\$23.04	\$9.85	\$9.45	\$0.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.01	\$54.53
MASON TRAINEES												
1st 90 Days	45.00	\$12.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12.20	\$18.29
1st year after 90 Days	45.00	\$12.20	\$9.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.05	\$28.14
2nd Year	50.00	\$13.55	\$9.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.40	\$30.18

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

Classification title contains "Bricklayer" because contract originates within the Bricklayer Local.

Ratio :

- 1-2 Journeyman to 1 Apprentice
- 3-4 Journeyman to 2 Apprentices
- 5-6 Journeyman to 2 Apprentices
- 6-10 Journeyman to 3 Apprentices

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

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, GEAUGA, LAKE,
LORAIN, MEDINA, PORTAGE, SUMMIT

Special Jurisdictional Note :

Details :

In the mutual interest of both Employer and Union and to promote the masonry industry, it is agreed that the Employer may work with the Union and the Local Educational Partners in the jurisdiction of this agreement to employ School to work students provided that no conflicts exist with any Federal or State Laws. Employer must be party to a bonified Apprenticeship and Training program registered with the State of Ohio (OSAC). It is further agreed by both parties that the wages for the Masonry Maintenance Specialist shall be forty-five percent (45%) of the journeyman rate with no fringe benefits or as specified by the Local Educational Partner in the jurisdiction of the agreement.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Cleveland Marble, Terrazzo, & Mosaic)

Change # : LCN01-2023ibLoc23ClevMarTerMos

Craft : Bricklayer Effective Date : 05/24/2023 Last Posted : 05/24/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Marble, Terrazzo, Mosaic	\$37.90		\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$58.08	\$77.03
Swing Scaffold Workers	\$38.90		\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$59.08	\$78.53
Stack	\$38.40		\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$58.58	\$77.78
Masonry Maintenance	\$17.06		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$17.06	\$25.59
Apprentice	Percent											
1st 6 months	60.00	\$22.74	\$9.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.69	\$44.06
2nd 6 months	65.00	\$24.64	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.82	\$57.13
3rd 6 months	70.00	\$26.53	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.71	\$59.97
4th 6 months	75.02	\$28.43	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.61	\$62.83
5th 6 months	80.00	\$30.32	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.50	\$65.66
6th 6 months	85.02	\$32.22	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.40	\$68.51
7th 6 months	90.00	\$34.11	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.29	\$71.34
8th 6 months	95.02	\$36.01	\$9.95	\$9.45	\$0.78	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.19	\$74.20
MASON TRAINEES 1st 90 Days	45.02	\$17.06	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$17.06	\$25.59
1st Year after 90 Days	45.02	\$17.06	\$9.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.01	\$35.54
2nd Year	50.00	\$18.95	\$9.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.90	\$38.38

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

Ratio :

1-2 Journeyman to 1 Apprentice
3-4 Journeyman to 2 Apprentices
5-6 Journeyman to 3 Apprentices
7-10 Journeyman to 4 Apprentices

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

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, GEAUGA, LAKE, PORTAGE,
SUMMIT

Special Jurisdictional Note :

Details :

In the mutual interest of both Employer and Union and to promote the masonry industry, it is agreed that the Employer may work with the Union and the Local Educational Partners in the jurisdiction of this agreement to employ School to work students provided that no conflicts exist with any Federal or State Laws. Employer must be party to a bonified Apprenticeship and Training program registered with the State of Ohio (OSAC). It is further agreed by both parties that the wages for the Masonry Maintenance Specialist shall be forty-five percent (45%) of the journeyman rate with no fringe benefits or as specified by the Local Educational Partner in the jurisdiction of the agreement.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Cleveland Terrazzo Finisher)

Change # : LCN01-2023ibLoc23ClevTerFin

Craft : Bricklayer Effective Date : 05/24/2023 Last Posted : 05/24/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Terrazzo Finisher	\$30.55		\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.31	\$61.59
Apprentice Terrazzo Finishers												
	Percent											
1st 6 months	60.00	\$18.33	\$9.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.28	\$37.44
2nd 6 months	70.02	\$21.39	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.15	\$47.85
3rd 6 months	75.00	\$22.91	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.67	\$50.13
4th 6 months	80.00	\$24.44	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.20	\$52.42
5th 6 months	85.00	\$25.97	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.73	\$54.71
6th 6 months	90.00	\$27.50	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.25	\$57.00

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 :

- 1-2 Journeymen to 1 Apprentice
- 3- 4 Journeymen to 2 Apprentices
- 5- 6 Journeymen to 3 Apprentices
- 7- 8 Journeymen to 4 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, MEDINA, PORTAGE, SUMMIT

Special Jurisdictional Note :

Details :

Tile Finishers:do all the cleaning, acid washing,grouting,by any methods or means. Also unpacking of all tiles,opening of all mastic containers,mixing of all mortar,thin-set and epoxy materials,also the distribution of it. They shall handle and distribute all materials such as sand,cement,lime,tile,all types of tile panels,prefabricated tile units, plastic materials and protective covering of all tile.Clean up and removal of always used in connection of said work.

Terrazzo Finishers:Assisting in grinding, and handling of material whether by hand or wheel barrow, or power buggies, including sand Portland cement, resinous cement and admixtures, aggregates of marble, stone or other compositions, bonding adhesives, sealers, waxes, and coatings used for Terrazzo Mosaic work, preparing, mixing by hand or machine, and distributing (spreading) all kinds of underbed or underlayment necessary and all scratch coat used for terrazzo and mosaic work. Also the rubbing, grinding, cleaning, sealing and polishing same either by hand or machine. will assist in the installation of the sand bed, tar paper, wire lath, divider strips, and rolling procedures and acid etching of all concrete floors that require it before installation. Shall handle all materials and assist in the installation of all types of terrazzo floors whether conventional or thin-set variety.

Marble Finishers:Loading and unloading handling and distributing of marble materials including the mixing of all materials used for the installation of marble, such as cement underbeds for the floors, thin-set or epoxies including but not limited to plastic materials. Clean up and removal of all waster material of said work. Cleaning and grouting of all marble and slate, and all polishing of marble and slate floors.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Cleveland Marble Finisher)

Change # : LCN01-2023ibLoc23ClevMarFin

Craft : Bricklayer Effective Date : 05/24/2023 Last Posted : 05/24/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Bricklayer Tile Marble Finisher	\$30.55		\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.31	\$61.59
Apprentice Tile Marble Finishers	Percent											
1st 6 months	60.00	\$18.33	\$9.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.28	\$37.44
2nd 6 months	70.02	\$21.39	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.15	\$47.85
3rd 6 months	75.00	\$22.91	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.67	\$50.13
4th 6 months	80.00	\$24.44	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.20	\$52.42
5th 6 months	85.00	\$25.97	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.73	\$54.71
6th 6 months	90.00	\$27.50	\$9.95	\$5.15	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.25	\$57.00

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 :

- 1-2 Journeymen to 1 Apprentice
- 3- 4 Journeymen to 2 Apprentice
- 5-6 Journeymen to 3 Apprentice
- 7-8 Journeymen to 4 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, MEDINA, PORTAGE, SUMMIT

Special Jurisdictional Note :

Details :

Tile Finishers:do all the cleaning, acid washing,grouting,by any methods or means. Also unpacking of all tiles,opening of all mastic containers,mixing of all mortar,thin-set and epoxy materials,also the distribution of it. They shall handle and distribute all materials such as sand,cement,lime,tile,all types of tile panels,prefabricated tile units, plastic materials and protective covering of all tile.Clean up and removal of always used in connection of said work.

Terrazzo Finishers:Assisting in grinding, and handling of material whether by hand or wheel barrow, or power buggies, including sand Portland cement, resinous cement and admixtures, aggregates of marble, stone or other compositions, bonding adhesives, sealers, waxes, and coatings used for Terrazzo Mosaic work, preparing, mixing by hand or machine, and distributing (spreading) all kinds of underbed or underlayment necessary and all scratch coat used for terrazzo and mosaic work. Also the rubbing, grinding, cleaning, sealing and polishing same either by hand or machine. will assist in the installation of the sand bed, tar paper, wire lath, divider strips, and rolling procedures and acid etching of all concrete floors that require it before installation. Shall handle all materials and assist in the installation of all types of terrazzo floors whether conventional or thin-set variety.

Marble Finishers:Loading and unloading handling and distributing of marble materials including the mixing of all materials used for the installation of marble, such as cement underbeds for the floors, thin-set or epoxies including but not limited to plastic materials. Clean up and removal of all waster material of said work. Cleaning and grouting of all marble and slate, and all polishing of marble and slate floors.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 7

Change # : LCN01-2010jcLoc7

Craft : Bricklayer Effective Date : 06/07/2010 Last Posted : 06/07/2010

	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 Finisher	\$23.70		\$5.80	\$2.45	\$0.60	\$0.00	\$0.00	\$0.00			\$32.55	\$44.40

Apprentice	Percent											
1st 6 Months	60.00	\$14.22	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			\$14.22	\$21.33
2nd 6 Months	70.00	\$16.59	\$5.80	\$2.45	\$0.60	\$0.00	\$0.00	\$0.00			\$25.44	\$33.74
3rd 6 Months	75.00	\$17.77	\$5.80	\$2.45	\$0.60	\$0.00	\$0.00	\$0.00			\$26.62	\$35.51
4th 6 Months	80.00	\$18.96	\$5.80	\$2.45	\$0.60	\$0.00	\$0.00	\$0.00			\$27.81	\$37.29
5th 6 Months	85.00	\$20.14	\$5.80	\$2.45	\$0.60	\$0.00	\$0.00	\$0.00			\$29.00	\$39.07
6th 6 Months	90.00	\$21.33	\$5.80	\$2.45	\$0.60	\$0.00	\$0.00	\$0.00			\$30.18	\$40.85

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

Ratio :

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

Jurisdiction (* denotes special jurisdictional note) :

PORTAGE, SUMMIT

Prevailing Wage Rate Skilled Crafts

Name of Union: **Bricklayer Local 7**

Change # : LCR02-2022sksLoc7

Craft : Bricklayer Effective Date : 09/21/2022 Last Posted : 09/21/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer	\$33.56		\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$54.45	\$71.23
Pointer Caulker Cleaner	\$33.56		\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$54.45	\$71.23
Swing Scaffold Workers	\$34.06		\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$54.95	\$71.98
Sewer Stack	\$34.06		\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$54.95	\$71.98
Hot Pay	\$34.56		\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$55.45	\$72.73
Stone Mason	\$33.56		\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$54.45	\$71.23

Apprentice	Percent											
1st 6 Months	60.00	\$20.14	\$8.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.89	\$38.95
2nd 6 Months	65.00	\$21.81	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$42.70	\$53.61
3rd 6 Months	70.00	\$23.49	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$44.38	\$56.13
4th 6 Months	75.00	\$25.17	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$46.06	\$58.65
5th 6 Months	80.00	\$26.85	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$47.74	\$61.16
6th 6 Months	85.00	\$28.53	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$49.42	\$63.68
7th 6 Months	90.00	\$30.20	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$51.09	\$66.20
8th 6 Months	95.00	\$31.88	\$8.75	\$8.39	\$0.75	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$52.77	\$68.71

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

Ratio :

1 journeyman to 1 apprentice
2-6 journeyman to 2 apprentice
7-12 journeyman to 3 apprentice
13-18 journeyman to 4 apprentice

Jurisdiction (* denotes special jurisdictional note) :

PORTAGE, SUMMIT

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 7 Marble Mason

Change # : LCN01-2013fbLoc7

Craft : Bricklayer Effective Date : 06/26/2013 Last Posted : 06/26/2013

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Bricklayer Marble Mason	\$29.67	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.22	\$54.06
Terrazzo Worker	\$29.67	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.22	\$54.06

Apprentice	Percent											
1st 6 Months	60.00	\$17.80	\$6.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$24.20	\$33.10
2nd 6 Months	70.00	\$20.77	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.32	\$40.70
3rd 6 Months	75.00	\$22.25	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.80	\$42.93
4th 6 Months	80.00	\$23.74	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.29	\$45.15
5th 6 Months	85.00	\$25.22	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.77	\$47.38
6th 6 Months	90.00	\$26.70	\$6.40	\$2.55	\$0.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.25	\$49.60

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

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 :

Jurisdiction (* denotes special jurisdictional note) :

1 Journeymen to 1 Apprentice
5 Journeymen to 1 Apprentice
10 Journeymen to 2 Apprentice
15 Journeymen to 3 Apprentice

PORTAGE, SUMMIT

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Commercial NE Zone 1A

Change # : OCR01-2022sksLocNEZone1A

Craft : Carpenter Effective Date : 06/15/2022 Last Posted : 06/15/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Carpenter	\$31.84	\$7.88	\$10.98	\$0.50	\$0.00	\$3.04	\$0.12	\$0.00	\$0.00	\$54.36	\$70.28

Apprentice	Percent											
1st 3 months	60.00	\$19.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.10	\$28.66
2nd 3 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$27.60	\$37.16
2nd 6 months is 1st year	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$27.60	\$37.16
3rd 6 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$27.60	\$37.16
4th 6 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$27.60	\$37.16
5th 6 months	70.00	\$22.29	\$7.88	\$7.69	\$0.50	\$0.00	\$2.13	\$0.12	\$0.00	\$0.00	\$40.61	\$51.75
6th 6 months	75.00	\$23.88	\$7.88	\$8.24	\$0.50	\$0.00	\$2.28	\$0.12	\$0.00	\$0.00	\$42.90	\$54.84
7th 6 months	80.00	\$25.47	\$7.88	\$8.78	\$0.50	\$0.00	\$2.43	\$0.12	\$0.00	\$0.00	\$45.18	\$57.92
8th 6 months	85.00	\$27.06	\$7.88	\$9.33	\$0.50	\$0.00	\$2.58	\$0.12	\$0.00	\$0.00	\$47.47	\$61.01

Special Calculation Note : *Other is International Training

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

MEDINA, PORTAGE, SUMMIT

Special Jurisdictional Note :

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Floorlayer NE Zone 1A

Change # : OCR01-2022sksLocNEZone1A

Craft : Carpenter Effective Date : 06/15/2022 Last Posted : 06/15/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Carpenter Floorlayer	\$31.84	\$7.88	\$10.98	\$0.50	\$0.00	\$3.04	\$0.14	\$0.00	\$0.00	\$54.38	\$70.30

Apprentice	Percent											
1st 3 months	60.00	\$19.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.10	\$28.66
2nd 3 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.14	\$0.00	\$0.00	\$27.62	\$37.18
2nd 6 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.14	\$0.00	\$0.00	\$27.62	\$37.18
3rd 6 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.14	\$0.00	\$0.00	\$27.62	\$37.18
4th 6 months	60.00	\$19.10	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.14	\$0.00	\$0.00	\$27.62	\$37.18
5th 6 months	70.00	\$22.29	\$7.88	\$7.69	\$0.50	\$0.00	\$2.13	\$0.14	\$0.00	\$0.00	\$40.63	\$51.77
6th 6 months	75.00	\$23.88	\$7.88	\$8.24	\$0.50	\$0.00	\$2.28	\$0.14	\$0.00	\$0.00	\$42.92	\$54.86
7th 6 months	80.00	\$25.47	\$7.88	\$8.78	\$0.50	\$0.00	\$2.43	\$0.14	\$0.00	\$0.00	\$45.20	\$57.94
8th 6 months	85.00	\$27.06	\$7.88	\$9.33	\$0.50	\$0.00	\$2.58	\$0.14	\$0.00	\$0.00	\$47.49	\$61.03

Special Calculation Note : *other is International Training

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

MEDINA, PORTAGE, SUMMIT

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Insulation NE Zone 1A

Change # : LCN01-2022sksLocNEZone1A

Craft : Carpenter Effective Date : 06/15/2022 Last Posted : 06/15/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Insulation	\$25.47		\$7.88	\$10.98	\$0.50	\$0.00	\$3.04	\$0.12	\$0.00	\$0.00	\$47.99	\$60.72

Apprentice	Percent											
1st 3 months	50.00	\$12.74	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12.74	\$19.10
2nd 3 months	50.00	\$12.74	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$21.23	\$27.60
2nd 6 months	50.00	\$12.74	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$21.23	\$27.60
3rd 6 months	55.00	\$14.01	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$22.51	\$29.51
4th 6 months	60.00	\$15.28	\$7.88	\$0.00	\$0.50	\$0.00	\$0.00	\$0.12	\$0.00	\$0.00	\$23.78	\$31.42
5th 6 months	70.00	\$17.83	\$7.88	\$7.69	\$0.50	\$0.00	\$2.13	\$0.12	\$0.00	\$0.00	\$36.15	\$45.06
6th 6 months	75.00	\$19.10	\$7.88	\$8.24	\$0.50	\$0.00	\$2.28	\$0.12	\$0.00	\$0.00	\$38.12	\$47.67
7th 6 months	80.00	\$20.38	\$7.88	\$8.78	\$0.50	\$0.00	\$2.43	\$0.12	\$0.00	\$0.00	\$40.09	\$50.27
8th 6 months	85.00	\$21.65	\$7.88	\$9.33	\$0.50	\$0.00	\$2.58	\$0.12	\$0.00	\$0.00	\$42.06	\$52.88

Special Calculation Note : *Other is Training

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

MEDINA, PORTAGE, SUMMIT

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Millwright NE Zone M1

Change # : OCR02-2022sksLocNEZoneM1

Craft : Carpenter Effective Date : 06/29/2022 Last Posted : 06/29/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Millwright	\$31.40		\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$56.30	\$72.00
Certified Welder	\$32.40		\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$57.30	\$73.50
Layout man on Monorail	\$33.15		\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$58.05	\$74.62

Apprentice	Percent											
1st 6 months	60.00	\$18.84	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$43.74	\$53.16
2nd 6 months	60.00	\$18.84	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$43.74	\$53.16
3rd 6 months	62.00	\$19.47	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$44.37	\$54.10
4th 6 months	65.50	\$20.57	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$45.47	\$55.75
5th 6 months	69.00	\$21.67	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$46.57	\$57.40
6th 6 months	72.52	\$22.77	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$47.67	\$59.06
7th 6 months	76.00	\$23.86	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$48.76	\$60.70
8th 6 months	80.00	\$25.12	\$7.90	\$11.33	\$0.50	\$0.00	\$5.00	\$0.17	\$0.00	\$0.00	\$50.02	\$62.58

Special Calculation Note : Other is Training.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

2 Journeymen to 1 Apprentice

ASHLAND, ASHTABULA, CUYAHOGA,
ERIE, GEAUGA, HURON, LAKE, LORAIN,
MEDINA, PORTAGE, RICHLAND, SUMMIT

Special Jurisdictional Note :

Details :

The term “Millwright and Machine Erectors” jurisdiction shall mean the unloading, hoisting, rigging, skidding, moving, dismantling, aligning, erecting, assembling, repairing, maintenance and adjusting of all structures, processing areas either under cover, under ground or elsewhere, required to process material, handle, manufacture or service, be it powered or receiving power manually, by steam, gas, electricity, gasoline, diesel, nuclear, solar, water, air or chemically, and in industries such as and including, which are identified for the purpose of description, but not limited to, the following: woodworking plants; canning industries; steel mills; coffee roasting plants; paper and pulp; cellophane; stone crushing; gravel and sand washing and handling; refineries; grain storage and handling; asphalt plants; sewage disposal; water plants; laundries; bakeries; mixing plants; can, bottle and bag packing plants; textile mills; paint mills; breweries; milk processing plants; power plants; aluminum processing or manufacturing plants; and amusement and entertainment fields. The installation of mechanical equipment in atomic energy plants; installation of reactors in power plants; installation of control rods and equipment in reactors; and installation of mechanical equipment in rocket missile bases, launchers, launching gantry, floating bases, hydraulic escape doors and any and all component parts thereto, either assembled, semi-assembled or disassembled. The installation of, but not limited to, the following: setting-up of all engines, motors, generators, air compressors, fans, pumps, scales, hoppers, conveyors of all types, sizes and their supports; escalators; man lifts; moving sidewalks; hoists; dumb waiters; all types of feeding machinery; amusement devices; mechanical pin setters and spotters in bowling alleys; refrigeration equipment; and the installation of all types of equipment necessary and required to process material either in the manufacturing or servicing. The handling and installation of pulleys, gears, sheaves, fly wheels, air and vacuum drives, worm drives and gear drives directly or indirectly coupled to motors, belts, chains, screws, legs, boots, guards, booth tanks, all bin valves, turn heads and indicators, shafting, bearings, cable sprockets, cutting all key seats in new and old work, troughs, chippers, filters, calendars, rolls, winders, rewinders, slitters, cutters, wrapping machines, blowers, forging machines, rams, hydraulic or otherwise, planing, extruder, ball, dust collectors, equipment in meat packing plants, splicing of ropes and cables. The laying-out, fabrication and installation of protection equipment including machinery guards, making and setting of templates for machinery, fabrication of bolts, nuts, pans, drilling of holes for any equipment which the Millwrights install regardless of materials; all welding and burning regardless of type, fabrication of all lines, hose or tubing used in lubricating machinery installed by Millwrights; grinding, cleaning, servicing and any machine work necessary for any part of any equipment installed by the Millwrights; and the break-in and trial run of any equipment or machinery installed by the Millwrights. It is agreed the Millwrights shall use the layout tools and optic equipment necessary to perform their work.

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 NE Zone P1

Change # : OCR01-2022sksLocNEZoneP1

Craft : Carpenter Effective Date : 06/15/2022 Last Posted : 06/15/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Carpenter Pile Driver	\$31.68	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$56.30	\$72.14
Diver	\$47.52	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$72.14	\$95.90
Certified Welder	\$32.73	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$57.35	\$73.71

Apprentice	Percent											
1st 6 months	60.00	\$19.01	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$43.63	\$53.13
2nd 6 months	60.00	\$19.01	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$43.63	\$53.13
3rd 6 months	62.00	\$19.64	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$44.26	\$54.08
4th 6 months	65.50	\$20.75	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$45.37	\$55.75
5th 6 months	69.00	\$21.86	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$46.48	\$57.41
6th 6 months	72.50	\$22.97	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$47.59	\$59.07
7th 6 months	76.00	\$24.08	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$48.70	\$60.74
8th 6 months	80.00	\$25.34	\$7.84	\$11.33	\$0.50	\$0.00	\$4.78	\$0.17	\$0.00	\$0.00	\$49.96	\$62.64

Special Calculation Note : *Other is Training

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ASHTABULA, CUYAHOGA, ERIE, GEAUGA, HURON, LAKE, LORAIN, MEDINA, PORTAGE, RICHLAND, SUMMIT

Special Jurisdictional Note :

Details :

Pile Drivers 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 is defined as sheeting or scrap piling. Underwater work that may be required in connection with the installation of piling. The driver 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. The construction of all wharves and docks, including the fabrication and installation of floating docks. 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 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: Cement Mason Bricklayer Local 97 HevHwy A

Change # : LCN01-2022sksHvyHwy

Craft : Bricklayer Effective Date : 06/08/2022 Last Posted : 06/08/2022

	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	\$31.40		\$9.75	\$8.30	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.95	\$65.65

Apprentice	Percent											
1st year	70.00	\$21.98	\$9.75	\$8.30	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.53	\$51.52
2nd year	80.00	\$25.12	\$9.75	\$8.30	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.67	\$56.23
3rd year	90.00	\$28.26	\$9.75	\$8.30	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.81	\$60.94

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: Cement Mason Bricklayer Local 97 HevHwy B

Change # : LCN01-2022sksHvyHwy

Craft : Bricklayer Effective Date : 06/08/2022 Last Posted : 06/08/2022

	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	\$32.39	\$9.75	\$8.30	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.95	\$67.15

Apprentice	Percent											
1st year	70.00	\$22.67	\$9.75	\$8.30	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.23	\$52.57
2nd year	80.00	\$25.91	\$9.75	\$8.30	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.47	\$57.43
3rd year	90.00	\$29.15	\$9.75	\$8.30	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.71	\$62.29

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.

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,
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 : (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: Cement Mason & Plasterer Local 109

Change # : LCN01-2022sksLoc109

Craft : Cement Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$31.74		\$9.09	\$7.35	\$0.70	\$0.00	\$4.74	\$0.07	\$0.00	\$0.00	\$53.69	\$69.56
Plasterer	\$30.61		\$8.75	\$7.35	\$0.70	\$0.00	\$4.75	\$0.07	\$0.00	\$0.00	\$52.23	\$67.53

Apprentice Cement Mason	Percent											
1st year	70.00	\$22.22	\$9.09	\$7.35	\$0.70	\$0.00	\$4.74	\$0.07	\$0.00	\$0.00	\$44.17	\$55.28
2nd year	79.98	\$25.39	\$9.09	\$7.35	\$0.70	\$0.00	\$4.74	\$0.07	\$0.00	\$0.00	\$47.34	\$60.03
3rd year	90.00	\$28.57	\$9.09	\$7.35	\$0.70	\$0.00	\$4.74	\$0.07	\$0.00	\$0.00	\$50.52	\$64.80
Plasterer Apprentice												
1st year	67.53	\$21.43	\$8.75	\$7.35	\$0.70	\$0.00	\$4.75	\$0.07	\$0.00	\$0.00	\$43.05	\$53.77
2nd year	77.17	\$24.49	\$8.75	\$7.35	\$0.70	\$0.00	\$4.75	\$0.07	\$0.00	\$0.00	\$46.11	\$58.36
3rd year	86.80	\$27.55	\$8.75	\$7.35	\$0.70	\$0.00	\$4.75	\$0.07	\$0.00	\$0.00	\$49.17	\$62.95

Special Calculation Note : Other is for International Training.

Ratio :

- 1 Journeymen to 1 Apprentice
- 5 Journeymen to 2 Apprentice
- 10 Journeyman to 3 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, HOLMES, MEDINA, PORTAGE, STARK, SUMMIT, TUSCARAWAS, WAYNE

Special Jurisdictional Note :

Details :

- Finishers when applying colorshake shall be paid an additional \$2.00 per DAY.
- Swing Scaffolds up to 50 feet shall be paid \$0.25 above the Journeymen rate.
- Swing Scaffolds over 50 feet shall be paid \$0.35 above the Journeymen rate.

Prevailing Wage Rate Skilled Crafts

Name of Union: **Electrical Local 71 Outside Utility Power**

Change # : LCN01-2023ibLoc7

Craft : Lineman Effective Date : 03/01/2023 Last Posted : 03/01/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lineman	\$46.03		\$7.00	\$1.38	\$0.46	\$0.00	\$11.05	\$0.75	\$0.00	\$0.00	\$66.67	\$89.68
Substation Technician	\$46.03		\$7.00	\$1.38	\$0.46	\$0.00	\$11.05	\$0.75	\$0.00	\$0.00	\$66.67	\$89.68
Cable Splicer	\$48.21		\$7.00	\$1.45	\$0.48	\$0.00	\$11.57	\$0.75	\$0.00	\$0.00	\$69.46	\$93.56
Operator A	\$41.26		\$7.00	\$1.24	\$0.41	\$0.00	\$9.90	\$0.75	\$0.00	\$0.00	\$60.56	\$81.19
Operator B	\$36.47		\$7.00	\$1.09	\$0.36	\$0.00	\$8.75	\$0.75	\$0.00	\$0.00	\$54.42	\$72.65
Operator C	\$29.28		\$7.00	\$0.88	\$0.29	\$0.00	\$7.03	\$0.75	\$0.00	\$0.00	\$45.23	\$59.87
Groundman 0-12 months Exp	\$23.02		\$7.00	\$0.69	\$0.23	\$0.00	\$5.52	\$0.75	\$0.00	\$0.00	\$37.21	\$48.72
Groundman 0-12 months Exp w/CDL	\$25.32		\$7.00	\$0.76	\$0.25	\$0.00	\$6.08	\$0.75	\$0.00	\$0.00	\$40.16	\$52.82
Groundman 1 yr or more	\$25.32		\$7.00	\$0.76	\$0.25	\$0.00	\$6.08	\$0.75	\$0.00	\$0.00	\$40.16	\$52.82
Groundman 1 yr or more w/CDL	\$29.92		\$7.00	\$0.90	\$0.30	\$0.00	\$7.18	\$0.75	\$0.00	\$0.00	\$46.05	\$61.01
Equipment Mechanic A	\$36.47		\$7.00	\$1.09	\$0.36	\$0.00	\$8.75	\$0.75	\$0.00	\$0.00	\$54.42	\$72.65
Equipment Mechanic B	\$32.88		\$7.00	\$0.99	\$0.33	\$0.00	\$7.89	\$0.75	\$0.00	\$0.00	\$49.84	\$66.28
Equipment Mechanic C	\$29.28		\$7.00	\$0.88	\$0.29	\$0.00	\$7.03	\$0.75	\$0.00	\$0.00	\$45.23	\$59.87
Line Truck w/uuger	\$32.28		\$7.00	\$0.97	\$0.32	\$0.00	\$7.75	\$0.75	\$0.00	\$0.00	\$49.07	\$65.21
Apprentice	Percent											
1st 1000 hrs	60.00	\$27.62	\$7.00	\$0.83	\$0.28	\$0.00	\$6.63	\$0.75	\$0.00	\$0.00	\$43.11	\$56.92
2nd 1000 hrs	65.00	\$29.92	\$7.00	\$0.90	\$0.30	\$0.00	\$7.18	\$0.75	\$0.00	\$0.00	\$46.05	\$61.01
3rd 1000 hrs	70.00	\$32.22	\$7.00	\$0.97	\$0.32	\$0.00	\$7.73	\$0.75	\$0.00	\$0.00	\$48.99	\$65.10

4th 1000 hrs	75.00	\$34.52	\$7.00	\$1.04	\$0.35	\$0.00	\$8.28	\$0.75	\$0.00	\$0.00	\$51.94	\$69.20
5th 1000 hrs	80.00	\$36.82	\$7.00	\$1.10	\$0.37	\$0.00	\$8.84	\$0.75	\$0.00	\$0.00	\$54.88	\$73.30
6th 1000 hrs	85.00	\$39.13	\$7.00	\$1.17	\$0.39	\$0.00	\$9.39	\$0.75	\$0.00	\$0.00	\$57.83	\$77.39
7th 1000 hrs	90.00	\$41.43	\$7.00	\$1.24	\$0.41	\$0.00	\$9.94	\$0.75	\$0.00	\$0.00	\$60.77	\$81.48

Special Calculation Note : Other is Health Retirement Account

Operator "A"

John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater then 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 : 0.30 is for Health Retirement Account.

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 (North Central Ohio)

Change # : LCN01-2023ibLoc71CentralOhio

Craft : Lineman Effective Date : 03/01/2023 Last Posted : 03/01/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lineman	\$43.02		\$7.00	\$1.29	\$0.43	\$0.00	\$8.60	\$0.56	\$0.00	\$0.00	\$60.90	\$82.41
Traffic Signal & Lighting Journeyman	\$41.43		\$7.00	\$1.24	\$0.41	\$0.00	\$8.29	\$0.56	\$0.00	\$0.00	\$58.93	\$79.64
Equipment Operator	\$37.78		\$7.00	\$1.13	\$0.38	\$0.00	\$7.56	\$0.56	\$0.00	\$0.00	\$54.41	\$73.30
Groundman 0-12 months (W/O CDL)	\$22.91		\$7.00	\$0.69	\$0.23	\$0.00	\$4.58	\$0.56	\$0.00	\$0.00	\$35.97	\$47.42
Groundman 0-12 months (W/CDL) plus	\$25.03		\$7.00	\$0.75	\$0.25	\$0.00	\$5.01	\$0.56	\$0.00	\$0.00	\$38.60	\$51.12
Groundsman greater than 1 Year (W/CDL)	\$27.71		\$7.00	\$0.81	\$0.28	\$0.00	\$5.43	\$0.56	\$0.00	\$0.00	\$41.79	\$55.65
Traffic Signal Apprentices												
1st 1,000 hours	\$24.86		\$7.00	\$0.75	\$0.25	\$0.00	\$4.97	\$0.56	\$0.00	\$0.00	\$38.39	\$50.82
2nd 1,000 hours	\$26.93		\$7.00	\$0.81	\$0.27	\$0.00	\$5.39	\$0.56	\$0.00	\$0.00	\$40.96	\$54.43
3rd 1,000 hours	\$29.00		\$7.00	\$0.87	\$0.29	\$0.00	\$5.80	\$0.56	\$0.00	\$0.00	\$43.52	\$58.02
4th 1,000 hours	\$31.07		\$7.00	\$0.93	\$0.31	\$0.00	\$6.21	\$0.56	\$0.00	\$0.00	\$46.08	\$61.62
5th 1,000 hours	\$33.14		\$7.00	\$0.99	\$0.33	\$0.00	\$6.63	\$0.56	\$0.00	\$0.00	\$48.65	\$65.22
6th 1,000 hours	\$37.29		\$7.00	\$1.12	\$0.37	\$0.00	\$7.46	\$0.56	\$0.00	\$0.00	\$53.80	\$72.45
Apprentice Lineman	Percent											
1st 1,000 Hours	60.00	\$25.81	\$7.00	\$0.77	\$0.26	\$0.00	\$5.16	\$0.56	\$0.00	\$0.00	\$39.56	\$52.47
2nd 1,000 Hours	65.00	\$27.96	\$7.00	\$0.84	\$0.28	\$0.00	\$5.59	\$0.56	\$0.00	\$0.00	\$42.23	\$56.21
3rd 1,000 Hours	70.00	\$30.11	\$7.00	\$0.90	\$0.30	\$0.00	\$6.02	\$0.56	\$0.00	\$0.00	\$44.89	\$59.95
4th 1,000 Hours	75.00	\$32.27	\$7.00	\$0.97	\$0.32	\$0.00	\$6.54	\$0.56	\$0.00	\$0.00	\$47.66	\$63.79

5th 1,000 Hours	80.00	\$34.42	\$7.00	\$1.03	\$0.34	\$0.00	\$6.88	\$0.56	\$0.00	\$0.00	\$50.23	\$67.43
6th 1,000 Hours	85.00	\$36.57	\$7.00	\$1.10	\$0.37	\$0.00	\$7.31	\$0.56	\$0.00	\$0.00	\$52.91	\$71.19
7th 1,000 Hours	90.00	\$38.72	\$7.00	\$1.16	\$0.39	\$0.00	\$7.74	\$0.56	\$0.00	\$0.00	\$55.57	\$74.93

Special Calculation Note : Other is Safety & Education Fund (\$0.06) and HRA (\$0.50).

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

BELMONT, CARROLL, HARRISON, HOLMES, JEFFERSON, MEDINA, PORTAGE, STARK, SUMMIT, WAYNE

Special Jurisdictional Note :

Details :

A groundman when directed shall assist a Journeyman in the performance of his/her work on the ground, including the use of hand tools. A Groundman under no circumstances shall climb poles, towers, ladders, or work from an elevated platform or bucket truck.

No more than three (3) Groundmen shall work alone. Jobs with more than three Groundmen shall be supervised by a Groundcrew Foreman, Journeyman Lineman, Journeyman Traffic Signal Technician or an Equipment Operator.

Scope of Work: installation and maintenance of highway and street lighting, highway and street sign lighting, electronic message boards and traffic control systems, camera systems, traffic signal work, substation and line construction including overhead and underground projects for private and industrial work as in accordance with the IBEW Constitution. This Agreement includes the operation of all tools and equipment necessary for the installation of the above projects.

Prevailing Wage Rate Skilled Crafts

Name of Union: Ironworker Local 17

Change # : LCN01-2020fbLoc17

Craft : Ironworker Effective Date : 12/24/2020 Last Posted : 12/24/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Ironworker	\$33.83		\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$59.04	\$75.95

Apprentice	Percent											
1st 6 Months	50.00	\$16.91	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$42.13	\$50.58
2nd 6 Months	55.00	\$18.61	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$43.82	\$53.12
2nd Year 1st 6 Months	70.00	\$23.68	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$48.89	\$60.73
2nd Year 2nd 6 Months	75.00	\$25.37	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$50.58	\$63.27
3rd Year 1st 6 Months	80.00	\$27.06	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$52.27	\$65.81
3rd Year 2nd 6 Months	85.00	\$28.76	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$53.97	\$68.34
4th Year 1st 6 Months	90.00	\$30.45	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$55.66	\$70.88
4th Year 2nd 6 Months	95.00	\$32.14	\$7.94	\$10.00	\$0.67	\$2.10	\$4.50	\$0.00	\$0.00	\$0.00	\$57.35	\$73.42

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

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

4 Journeymen to 1 Apprentice on Structural Work
3 Journeymen to 1 Apprentice on Rod Work
2 Journeymen to 1 Apprentice on Finishing, Steel Sash, Stairway and Ornamental Work
1 Apprentice for every Sheeting Gang
1 Journeymen to 2 Apprentice Roadway Signage and Sound Barriers
2 Journeymen to 2 Apprentice Unloading and Erection of Light Gauge Metal Trusses

ASHTABULA, CUYAHOGA, ERIE,
GEAUGA, HURON, LAKE, LORAIN,
MEDINA, PORTAGE, SUMMIT

Special Jurisdictional Note : West Boundary Line :Sandusky, Ohio: Boundary lines between Local 17 & Local 55 are as follows: Columbus Ave north to Sandusky Bay (and/or Lake Erie): Columbus Ave South to present Route 4: Route 4 South to present Route 99: from Route 99 south to old Route 224-all territory to the west of the boundary line to be the jurisdiction of Local 55.All territory to the East of the boundary line to be the jurisdiction of Local 17.Kelly's Island to be within jurisdiction of Local 17.All bridges,tunnels,viaducts,etc, relative to these boundary lines shall be the jurisdiction of Local 17

South Boundary Line:Canton, Ohio: Boundary lines between Local 17 & Local 550 are as follows: All territory north of old Route 224 line to be the jurisdiction of Local 17. All bridges,tunnels,viaducts,signs,etc, relative to old Route 224 line to be within the jurisdiction of Local 17. All territory south of old Route 224 line is to be within the jurisdiction of Local 550, except for everything within the city limits of Barberton which shall be the jurisdiction of Local 17.

Reading from West to East: Route old 224 line: Greenwich Ave-Wooster Road or East Ave. Route old 224 line: New 224 line including Cloverleaf: East Waterloo Road: New 224 line-Attwood Road-Old 224. This will be considered to be the old Route 224 line,except for the city limits of Barberton, Ohio which shall be the jurisdiction of Local 17

Southeast Boundary : Between local 17 and Local 207 are as follows: West of a line from Middlefield to Shalersville to Deerfield, shall be under the jurisdiction of local 17. East of a line from Middlefield, to Shalersville to Deerfield, shall be under the jurisdiction of Local 207.

Local 17 & Local 207 have agreed that the Ohio County of Ashtabula shall be as follows: Everything North of Route 6, starting at the Geauga County line, proceeding east to State Route 45, shall be under the jurisdiction of Local 17. Everything South, starting at the Geauga County line shall be under local 207.

North Boundary: The East boundary line and the West boundary line continuing North halfway across Lake Erie.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor HevHwy 2

Change # : LCN01-2023ibLaborHevHwy2

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	\$35.05		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.85	\$66.37
Group 2	\$35.22		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.02	\$66.63
Group 3	\$35.55		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.35	\$67.12
Group 4	\$36.00		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.80	\$67.80
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	\$21.03	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$34.83	\$45.34
1001-2000 hrs	70.02	\$24.54	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$38.34	\$50.61
2001-3000 hrs	80.00	\$28.04	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.84	\$55.86
3001-4000 hrs	90.00	\$31.54	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$45.35	\$61.12
More Than 4000 hrs	100.00	\$35.05	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.85	\$66.37

Special Calculation Note : Watchman has 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) :

ASHTABULA, ERIE, HURON, LORAIN, LUCAS, MAHONING, MEDINA, OTTAWA, PORTAGE, SANDUSKY, STARK, SUMMIT, TRUMBULL, WOOD

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), Yarnier, 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 894 Building

Change # : LCN01-2021fbLoc894

Craft : Laborer Effective Date : 01/12/2021 Last Posted : 01/12/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)	MIS C (*)		
Classification											
Laborer Group 1	\$32.92	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$44.22	\$60.68
Laborer Group 2	\$33.07	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$44.37	\$60.91
Laborer Group 3	\$33.12	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$44.42	\$60.98
Laborer Group 4	\$33.42	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$44.72	\$61.43
Laborer Group 5	\$27.95	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$39.25	\$53.22

Apprentice	Percent											
1ST 1-1000 hrs	60.00	\$19.75	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$31.05	\$40.93
2nd 1000-2000 hrs	70.00	\$23.04	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$34.34	\$45.87
3rd 2000-3000 hrs	80.00	\$26.34	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$37.64	\$50.80
4th 3000-4000 hrs	90.00	\$29.63	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$40.93	\$55.74
More than 4000 hrs	100.00	\$32.92	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$44.22	\$60.68

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

Ratio :

1 Apprentice to 1 Journeymen
1 Apprentice to 4 Journeymen

Jurisdiction (* denotes special jurisdictional note) :

MEDINA, PORTAGE, SUMMIT

Special Jurisdictional Note :

Details :

Group 1

Building & Construction Laborer, Welder Helper, Carpenter Tender, Landscape Laborer, Mason Tender, Concrete Bucket Tender, Concrete & Construction Specialist, Asbestos Laborer, Toxic/Hazardous Waste Laborer, Lead Removal, Level D

Group 2

Air Driven Boring Machine, Tamper Operator, Asphalt Raker, Paving Bed Maker, Concrete Puddler on Building Work, Concrete Batch Dumper, Materials Mixer, Wire Mesh Handler, Hook-up on Demolition Work, Scaffold Erector, Structural, Precast Erector, Power Tools - Air, Gas or Electric, Hazardous Waste Laborer, Lead Removal Level C

Group 3

Pipe Layer, Rock Driller, Mucker-Tunnel, Burner, Form Setter, Power Saw Jackhammer, Bottom Man, Hod Carrier, Power Buggy or Power Wheelbarrow, Bob Cat, Skid Steer Work and or similar, Hazardous Waste Laborer, Lead Removal Level B

Group 4

Gunnite Nozzle Man, Tunnel Miner, Water Link Caulker, Dynamite Man, Structural Precast Welder, Pump Hose Nozzle Man, Hazardous Waste Laborer, Lead Removal Level A

Group 5

Watchman

Hazardous Waste Removal and Lead Abatement:

For Laborers, working in an exclusive or "hot" area with toxic or hazardous materials, one of the following personal protective equipment ensembles will be required.

Level A

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; cool vests and voice-activated radios are optional equipment sometimes worn.

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, but the risk of skin exposure is not as great as in Level A situation.

Level C

Protective equipment includes a protective suit and an air purifying respirator (APR) with the appropriate filter canisters. The ensemble is used when the contaminants are reliably known not to be hazardous to the skin and not IDLH (Immediately Dangerous to Life or Health) and correct filter protection is available.

Level D

Protective Equipment 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.

Prevailing Wage Rate Skilled Crafts

Name of Union: Operating Engineers - Building Local 18 - Zone I

Change # : LCN01-2023ibLoc18

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 Group A	\$42.98		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.23	\$80.72
Operator Group B	\$42.88		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.13	\$80.57
Operator Group C	\$41.84		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$58.09	\$79.01
Operator Group D	\$40.62		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.87	\$77.18
Operator Group E	\$35.33		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$51.58	\$69.24
Master Mechanic	\$43.23		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.48	\$81.09
Crane 150'-180'	\$43.48		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.73	\$81.47
Crane 180'-249"	\$43.98		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$60.23	\$82.22
Crane 250' and over	\$44.23		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$60.48	\$82.59
<hr/>												
Apprentice	Percent											
1st Year	50.00	\$21.49	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.74	\$48.49
2nd Year	60.00	\$25.79	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$42.04	\$54.93
3rd Year	70.00	\$30.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$46.34	\$61.38
4th Year	80.00	\$34.38	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$50.63	\$67.83
Field Mechanic Trainee												
1st Year	50.00	\$21.49	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.74	\$48.49
2nd Year	60.00	\$25.79	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$42.04	\$54.93
3rd Year	70.00	\$30.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$46.34	\$61.38
4th Year	80.00	\$34.38	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$50.63	\$67.83

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

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 65 will not be subject to the apprenticeship ratios in this collective bargaining agreement

Jurisdiction (* denotes special jurisdictional note) :

SUMMIT, PORTAGE

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% if required to have a 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; Gunite 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 I

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	\$42.98		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.23	\$80.72
Operator Class B	\$42.88		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.13	\$80.57
Operator Class C	\$41.84		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$58.09	\$79.01
Operator Class D	\$40.62		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.87	\$77.18
Operator Class E	\$35.33		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$51.58	\$69.24
Master Mechanic	\$43.23		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$59.48	\$81.09
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Apprentice	Percent											
1st Year	50.00	\$21.49	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.74	\$48.49
2nd Year	60.00	\$25.79	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$42.04	\$54.93
3rd Year	70.00	\$30.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$46.34	\$61.38
4th Year	80.00	\$34.38	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$50.63	\$67.83
Field Mech Trainee												
1st year	50.00	\$21.49	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.74	\$48.49
2nd year	60.00	\$25.79	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$42.04	\$54.93
3rd year	70.00	\$30.09	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$46.34	\$61.38
4th year	80.00	\$34.38	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$50.63	\$67.83

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

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, ERIE, GEAUGA, LAKE, LORAIN, MEDINA, PORTAGE, SUMMIT

referral when they are available. An Apprentice, while employed as part of a crew per Article VIII, paragraph 69 will not be subject to the apprenticeship ratios in this collective bargaining agreement

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% if required to have a 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 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: Painter Local 639 Zone 1 Sign

Change # : LCN01-2021fbLoc639

Craft : Painter Effective Date : 06/29/2021 Last Posted : 06/29/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuit y	Othe r	LECE T (*)			MIS C (*)
Classification												
Painter Sign Erector Service/Patteren/Metal Fab/Neon Class A	\$24.35		\$7.16	\$5.57	\$0.25	\$0.71	\$0.00	\$1.00	\$0.00	\$0.00	\$39.04	\$51.22
Painter Sign Erector/Service/Patteren/Metal Fab/Neon Class B	\$24.35		\$7.16	\$5.57	\$0.25	\$1.42	\$0.00	\$1.00	\$0.00	\$0.00	\$39.75	\$51.93
Painter Sign Erector/Service/Patteren/Metal Fab/Neon Class C	\$24.35		\$7.16	\$5.57	\$0.25	\$2.13	\$0.00	\$1.00	\$0.00	\$0.00	\$40.46	\$52.64
Painter Sign Erector/Service/Patteren/Metal Fab/Neon Class D	\$24.35		\$7.16	\$5.57	\$0.25	\$2.84	\$0.00	\$1.00	\$0.00	\$0.00	\$41.17	\$53.35
Computer Operator, Router, Spray Painter/Wood Class A	\$22.83		\$7.16	\$5.57	\$0.25	\$0.68	\$0.00	\$0.96	\$0.00	\$0.00	\$37.45	\$48.87
Computer Operator, Router, Spray Painter/Wood Class B	\$22.83		\$7.16	\$5.57	\$0.25	\$1.36	\$0.00	\$0.96	\$0.00	\$0.00	\$38.13	\$49.55
Computer Operator, Router, Spray Painter/Wood Class C	\$22.83		\$7.16	\$5.57	\$0.25	\$2.04	\$0.00	\$0.96	\$0.00	\$0.00	\$38.81	\$50.23
Computer Operator, Router, Spray Painter/Wood Class D	\$22.83		\$7.16	\$5.57	\$0.25	\$2.72	\$0.00	\$0.96	\$0.00	\$0.00	\$39.49	\$50.91
Final Assembly,Helper Class A	\$18.33		\$7.16	\$5.57	\$0.25	\$0.60	\$0.00	\$0.84	\$0.00	\$0.00	\$32.75	\$41.92
Final Assembly,Helper Class B	\$18.33		\$7.16	\$5.57	\$0.25	\$1.20	\$0.00	\$0.84	\$0.00	\$0.00	\$33.35	\$42.52
Final Assembly,Helper Class C	\$18.33		\$7.16	\$5.57	\$0.25	\$1.80	\$0.00	\$0.84	\$0.00	\$0.00	\$33.95	\$43.12
Final Assembly,Helper Class D	\$18.33		\$7.16	\$5.57	\$0.25	\$2.40	\$0.00	\$0.84	\$0.00	\$0.00	\$34.55	\$43.72
Apprentice	Percent											
1-2000 hrs	50.00	\$12.18	\$7.16	\$5.57	\$0.25	\$0.00	\$0.00	\$0.67	\$0.00	\$0.00	\$25.83	\$31.91

2001-3000 hrs	55.00	\$13.39	\$7.16	\$5.57	\$0.25	\$0.50	\$0.00	\$0.70	\$0.00	\$0.00	\$27.57	\$34.27
3001-4000 hrs	60.00	\$14.61	\$7.16	\$5.57	\$0.25	\$0.53	\$0.00	\$0.74	\$0.00	\$0.00	\$28.86	\$36.17
4001-5000 hrs	65.00	\$15.83	\$7.16	\$5.57	\$0.25	\$0.55	\$0.00	\$0.77	\$0.00	\$0.00	\$30.13	\$38.04
5001-6000 hrs	70.00	\$17.04	\$7.16	\$5.57	\$0.25	\$1.15	\$0.00	\$0.80	\$0.00	\$0.00	\$31.97	\$40.50
6001-7000 hrs	85.00	\$20.70	\$7.16	\$5.57	\$0.25	\$1.29	\$0.00	\$0.90	\$0.00	\$0.00	\$35.87	\$46.22
7001-8000 hrs	90.00	\$21.92	\$7.16	\$5.57	\$0.25	\$1.33	\$0.00	\$0.93	\$0.00	\$0.00	\$37.16	\$48.11

Special Calculation Note : Other is for paid holidays. Apprentice Pay Rate should be based on proper Classification.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ASHTABULA, CUYAHOGA,
 GEAUGA, LAKE, MEDINA, PORTAGE,
 RICHLAND, SUMMIT

Special Jurisdictional Note :

Details :

Class A Worker: More than 1 year but less than 2 years.

Class B Worker: More than 2 years but less than 10 years.

Class C Worker: More than 10 years but less than 20 years.

Class D Worker: More than 20 years

Prevailing Wage Rate Skilled Crafts

Name of Union: **Roofer Local 88**

Change # : LCN01-2022sksLoc88

Craft : Roofer Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Roofer	\$29.07		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$49.85	\$64.39
HELPERS												
Helper - 500 Hrs. 1st 6 months	\$16.27		\$2.25	\$0.00	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$20.60	\$28.73
Helper - 500 Hrs. 2nd 6 months	\$18.02		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$38.80	\$47.81
2nd year Helper	\$19.76		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$40.54	\$50.42
3rd year Helper	\$21.51		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$42.29	\$53.05
4th year Helper	\$23.25		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$44.03	\$55.66
5th year Helper	\$25.00		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$45.78	\$58.28

Apprentice	Percent											
1st 6 months w/500 hrs	55.97	\$16.27	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$37.05	\$45.19
2nd 6 months w/500 hrs	62.00	\$18.02	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$38.80	\$47.82
3rd 6 months w/500 hrs	67.97	\$19.76	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$40.54	\$50.42

4th 6 months w/500 hrs	74.00	\$21.51	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$42.29	\$53.05
5th 6 months w/500 hrs	79.98	\$23.25	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$44.03	\$55.66
6th 6 months w/500 hrs	86.00	\$25.00	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$45.78	\$58.28
7th 6 months w/500 hrs	92.00	\$26.74	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$47.52	\$60.90

Special Calculation Note : Roofers working in any form of coal tar pitch, whether hot or cold, installing and/or removing will be paid \$.25 more per hour. Other \$.18 is for C.I.D.B.

Ratio :

No helper shall be used on any one job unless 1 Journeymen, and 1 Apprentices are working on said job .One
 (1) Journeymen to One (1) Apprentice to One
 (1) Helper

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CARROLL, COSHOCTON, CRAWFORD, HOLMES, HURON, LORAIN*, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TUSCARAWAS, WAYNE

Special Jurisdictional Note : In Lorain County (South of the Turnpike)

Prevailing Wage Rate Skilled Crafts

Name of Union: Sheet Metal Local 33 Industrial Door

Change # : LCN01-2022sksLoc33Industrial DoorClev

Craft : Sheet Metal Worker Effective Date : 08/01/2022 Last Posted : 07/27/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)	MIS C (*)		
Classification											
Sheet Metal Worker	\$23.92	\$8.66	\$5.55	\$0.17	\$0.00	\$2.15	\$0.00	\$0.00	\$0.00	\$40.45	\$52.41

Trainees	Percent											
1st 60 days Probationary Period	52.00	\$12.44	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12.44	\$18.66
61st day-12 months	58.00	\$13.87	\$8.66	\$1.92	\$0.17	\$0.00	\$1.41	\$0.00	\$0.00	\$0.00	\$26.03	\$32.97
2nd yr	68.00	\$16.27	\$8.66	\$1.92	\$0.17	\$0.00	\$1.59	\$0.00	\$0.00	\$0.00	\$28.61	\$36.74
3rd yr	73.00	\$17.46	\$8.66	\$1.92	\$0.17	\$0.00	\$1.69	\$0.00	\$0.00	\$0.00	\$29.90	\$38.63
4th yr	80.00	\$19.14	\$8.66	\$1.92	\$0.17	\$0.00	\$1.80	\$0.00	\$0.00	\$0.00	\$31.69	\$41.25
5th yr	86.00	\$20.57	\$8.66	\$1.92	\$0.17	\$0.00	\$1.91	\$0.00	\$0.00	\$0.00	\$33.23	\$43.52

Special Calculation Note :

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ASHTABULA, CARROLL, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DEFIANCE, ERIE, FULTON, GEAUGA, HANCOCK, HENRY, HOLMES, HURON, LAKE, LORAIN, LUCAS, MAHONING, MEDINA, OTTAWA, PAULDING, PORTAGE, PUTNAM, RICHLAND, SANDUSKY,

SENECA, STARK, SUMMIT, TRUMBULL,
TUSCARAWAS, WAYNE, WILLIAMS,
WOOD

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Sheet Metal Local 33 (Akron)

Change # : LCN01-2022sksLoc33Akron

Craft : Sheet Metal Worker Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuit y	Othe r	LECE T (*)	MIS C (*)		
Classification											
Sheet Metal Worker	\$33.89	\$9.35	\$13.20	\$0.93	\$0.00	\$7.20	\$0.00	\$0.00	\$0.00	\$64.57	\$81.52

Apprentice	Percent											
Apprentice												
1st year	60.00	\$20.33	\$9.35	\$4.81	\$0.17	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.66	\$44.83
2nd year	65.00	\$22.03	\$9.35	\$5.97	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$0.00	\$41.88	\$52.89
3rd year	70.00	\$23.72	\$9.35	\$6.37	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$0.00	\$43.97	\$55.83
4th year	80.00	\$27.11	\$9.35	\$7.18	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$0.00	\$48.17	\$61.73
5th year as of May 1, 2022 until completion of apprenticeship	80.00	\$27.11	\$9.35	\$7.18	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$0.00	\$48.17	\$61.73

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

Ratio :

- 1 Journeymen to 1 Apprentice
- 2 Journeymen to 1 Apprentice
- 3 Journeymen to 2 Apprentice
- 4 Journeymen to 2 Apprentice
- 5-7 Journeymen to 3 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

- ASHLAND, CARROLL, COSHOCTON, CRAWFORD, HOLMES, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TUSCARAWAS, WAYNE

8-10 Journeymen to 4 Apprentice
11-13 Journeymen to 5 Apprentice
14, 15 Journeymen to 6 Apprentice
and maintaining a three to one apprentice ratio
thereafter.

Special Jurisdictional Note :

Details :

Scope of Work: This Agreement covers the rates of pay and conditions of employment of all employees of the Employer engaged in, but not limited to, the a) manufacture, fabrication, assembling, handling, erection, installation, dismantling, conditioning, adjustment, alteration, repairing and servicing of all ferrous or non-ferrous metal work and all other materials used in lieu thereof and of all HVAC systems, air-veyor systems, exhaust systems, and air handling systems regardless of material used, including the setting of all equipment and all reinforcements in connection therewith; (b) all lagging over insulation and all duct-lining; (c) testing, servicing, and balancing of all air-handling equipment and duct work; (d) the preparation of all shop and field sketches, whether manually drawn or computer assisted, used in fabrication and erection, including those taken from original architectural and engineering drawings or sketches, and (e) metal roofing; and (f) all other work included in the jurisdictional claims of Sheet Metal Worker's International Association.

Industrial Door-Installation and service of overhead doors roll up doors, docks and dock leveling.

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 :

Jurisdiction (* denotes special jurisdictional note) :

3 Journeymen to 1 Apprentice

ADAMS, ALLEN, ASHLAND, ASHTABULA,
ATHENS, AUGLAIZE, BELMONT, BROWN,
BUTLER, CARROLL, CHAMPAIGN, CLARK,
CLERMONT, CLINTON, COLUMBIANA,
COSHOCOTON, 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,
COSHOCOTON, 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 :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 306 Inside

Change # : LCN01-2022sksLoc306in

Craft : Electrical Effective Date : 06/29/2022 Last Posted : 06/29/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$38.44		\$11.31	\$1.15	\$0.86	\$0.00	\$9.00	\$0.00	\$0.00	\$0.00	\$60.76	\$79.98
Electrician w/10 hrs JATC training in the past 12 months	\$38.94		\$11.31	\$1.17	\$0.88	\$0.00	\$9.00	\$0.00	\$0.00	\$0.00	\$61.30	\$80.77
Cable Splicer	\$42.28		\$11.31	\$1.27	\$0.95	\$0.00	\$9.00	\$0.00	\$0.00	\$0.00	\$64.81	\$85.95
Cable Splicer w/10 hrs JATC training in the past 12 months	\$42.83		\$11.31	\$1.28	\$0.96	\$0.00	\$9.00	\$0.00	\$0.00	\$0.00	\$65.38	\$86.79

Apprentice	Percent											
1st period	40.00	\$15.38	\$11.31	\$0.46	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.50	\$35.18
2nd period	45.00	\$17.30	\$11.31	\$0.52	\$0.39	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.52	\$38.17
3rd period	50.00	\$19.22	\$11.31	\$0.58	\$0.43	\$0.00	\$4.50	\$0.00	\$0.00	\$0.00	\$36.04	\$45.65
4th period	60.00	\$23.06	\$11.31	\$0.69	\$0.52	\$0.00	\$5.40	\$0.00	\$0.00	\$0.00	\$40.98	\$52.52
5th period	70.00	\$26.91	\$11.31	\$0.81	\$0.61	\$0.00	\$6.30	\$0.00	\$0.00	\$0.00	\$45.94	\$59.39
6th period	80.00	\$30.75	\$11.31	\$0.92	\$0.69	\$0.00	\$7.20	\$0.00	\$0.00	\$0.00	\$50.87	\$66.25

Special Calculation Note :

Ratio :

- 1 - 3 Journeymen to 2 Apprentice
- 4 - 6 Journeymen to 4 Apprentice
- 7 - 9 Journeymen to 6 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

MEDINA*, PORTAGE*, SUMMIT, WAYNE*

10-12 Journeymen to 8 Apprentice
13-15 Journeymen to 10 Apprentice

First person assigned to a job site shall be a
Journeyman Wireman

Special Jurisdictional Note :

Medina County the following townships are included: (Brunswick, Chatham, Granger, Guilford, Harrisville, Hinckley, Homer, Lafayette, Medina, Montville, Sharon, Spencer, Wadsworth, Westfield and York).

Portage County the following townships are included: (Atwater, Aurora, Brimfield, Deerfield, Franklin, Mantua, Randolph, Ravenna, Rootstown, Shalersville, Streetsboro and Suffield).

Wayne County the following townships are included: (Baughman, Canaan, Chester, Chippewa, Congress, Green, Milton, and Wayne).

Details :

This rate covers both Commercial and Industrial. High work a premium rate of shall be paid at (3%) per hour for all work performed over (30') free-fall and for work in a mine. Line work is excluded.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 573 Lt Commercial

Change # : LCN01-2023ibLoc573in

Craft : Electrical Effective Date : 01/18/2023 Last Posted : 01/18/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)			MIS C (*)
Classification												
Electrician	\$38.70		\$7.90	\$7.11	\$0.90	\$0.00	\$3.87	\$1.16	\$0.00	\$0.00	\$59.64	\$78.99
CE-3 12,001-14,000 Hrs	\$27.59		\$6.51	\$0.83	\$0.82	\$0.00	\$0.00	\$0.83	\$0.00	\$0.10	\$36.68	\$50.47
CE-2 10,001-12,000 Hrs	\$21.68		\$6.51	\$0.65	\$0.87	\$0.00	\$0.00	\$0.65	\$0.00	\$0.10	\$30.46	\$41.30
CE-1 8,001-10,000 Hrs	\$19.71		\$6.51	\$0.59	\$0.87	\$0.00	\$0.00	\$0.59	\$0.00	\$0.10	\$28.37	\$38.23
CW-4 6,001-8,000 Hrs	\$17.74		\$6.51	\$0.53	\$0.87	\$0.00	\$0.00	\$0.53	\$0.00	\$0.10	\$26.28	\$35.15
CW-3 4,001-6,000 Hrs	\$15.77		\$6.51	\$0.47	\$0.87	\$0.00	\$0.00	\$0.47	\$0.00	\$0.10	\$24.19	\$32.07
CW-2 2,001-4,000 Hrs	\$14.78		\$6.51	\$0.44	\$0.87	\$0.00	\$0.00	\$0.44	\$0.00	\$0.10	\$23.14	\$30.53
CW-1 0-2,000 Hrs	\$13.80		\$6.51	\$0.41	\$0.87	\$0.00	\$0.00	\$0.41	\$0.00	\$0.10	\$22.10	\$29.00
Apprentices Indentured After 6/1/2004	Percent											
1st period	40.00	\$15.48	\$7.90	\$0.00	\$0.90	\$0.00	\$0.00	\$0.46	\$0.00	\$0.00	\$24.74	\$32.48

2nd period	45.00	\$17.42	\$7.90	\$0.00	\$0.90	\$0.00	\$0.00	\$0.52	\$0.00	\$0.00	\$26.74	\$35.44
3rd period	50.00	\$19.35	\$7.90	\$3.55	\$0.90	\$0.00	\$1.94	\$0.58	\$0.00	\$0.00	\$34.22	\$43.89
4th period	55.00	\$21.29	\$7.90	\$3.91	\$0.90	\$0.00	\$2.13	\$0.64	\$0.00	\$0.00	\$36.77	\$47.41
5th Period	60.00	\$23.22	\$7.90	\$4.27	\$0.90	\$0.00	\$2.52	\$0.70	\$0.00	\$0.00	\$39.51	\$51.12
6th period	65.00	\$25.16	\$7.90	\$4.62	\$0.90	\$0.00	\$2.52	\$0.75	\$0.00	\$0.00	\$41.85	\$54.42
7th period	70.00	\$27.09	\$7.90	\$4.98	\$0.90	\$0.00	\$2.71	\$0.81	\$0.00	\$0.00	\$44.39	\$57.94
8th period	75.00	\$29.03	\$7.90	\$5.33	\$0.90	\$0.00	\$2.90	\$0.87	\$0.00	\$0.00	\$46.92	\$61.44
9th period	80.00	\$30.96	\$7.90	\$5.69	\$0.90	\$0.00	\$3.10	\$0.93	\$0.00	\$0.00	\$49.48	\$64.96
10th period	90.00	\$34.83	\$7.90	\$6.40	\$0.90	\$0.00	\$3.48	\$1.04	\$0.00	\$0.00	\$54.55	\$71.97

Special Calculation Note : Other is National Electrical Benefit Fund and *Misc is Administrative Collection Fee.

Ratio :

- 1 Journeyman to 3 Apprentices
- 4 Journeyman to 6 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

- ASHTABULA*, GEAUGA*, MAHONING*, PORTAGE*, TRUMBULL*

Construction Electrician and Construction Wireman Ratio

There shall be a minimum ratio of one inside Journeyman Wireman 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 : In Ashtabula County the following townships are included: (Colebrook, Wayne, Williamsfield, Orwell and Windsor). In Geauga County the following townships are included: (Auburn, Middlefield, Parkman and Troy). In Mahoning County the following township is included: (Milton). In Portage County the following townships are included: (Charlestown, Edinburg, Freedom, Hiram, Nelson, Palmyra, Paris and Windham). In Trumbull County the following townships are excluded: (Liberty and Hubbard).

Scope of Work for the Lt. Commercial Rate is as follows: Small medical clinics, stand-alone doctor and dentist offices with up to 600 amp services (not attached to a hospital),

Gas Stations/Convenience stores, fast food restaurants, franchised chain restaurants including independent bars and taverns, places of worship, funeral homes, Nursing homes, assisted living facilities and day-care facilities under 15,000 sq ft, small office, retail/wholesale facilities under 15,000 sq ft with less than 10 units attached, storage units, car washes, express hotels and motels (4 stories or less) without conference or restaurant facilities, residential units (subject to Davis Bacon Rates) small stand-alone manufacturing facilities when free standing and not part of a larger facility (less than 15,000 sq ft) solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with the 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 of one replacement of existing fixtures.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 306 Lightning Rod

Change # : OCR01-2022sksLoc306VDV

Craft : Voice Data Video Effective Date : 11/10/2022 Last Posted : 11/10/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lightning Protection Installer	\$31.15		\$7.75	\$0.93	\$0.00	\$2.90	\$1.87	\$0.00	\$0.00	\$0.00	\$44.60	\$60.17

Trainee Experience Level	Percent											
1st Day- 6 months	50.00	\$15.58	\$7.75	\$0.47	\$0.00	\$0.42	\$0.93	\$0.00	\$0.00	\$0.00	\$25.14	\$32.93
2nd 6 months	55.00	\$17.13	\$7.75	\$0.51	\$0.00	\$0.46	\$1.03	\$0.00	\$0.00	\$0.00	\$26.88	\$35.45
3rd 6 months	60.00	\$18.69	\$7.75	\$0.56	\$0.00	\$0.91	\$1.12	\$0.00	\$0.00	\$0.00	\$29.03	\$38.37
4th 6 months	65.00	\$20.25	\$7.75	\$0.61	\$0.00	\$0.99	\$1.21	\$0.00	\$0.00	\$0.00	\$30.81	\$40.93
3rd Year	70.00	\$21.80	\$7.75	\$0.65	\$0.00	\$1.55	\$1.31	\$0.00	\$0.00	\$0.00	\$33.07	\$43.97
4th Year	80.00	\$24.92	\$7.75	\$0.75	\$0.00	\$1.77	\$1.49	\$0.00	\$0.00	\$0.00	\$36.68	\$49.14
5th Year	90.00	\$28.03	\$7.75	\$0.84	\$0.00	\$1.99	\$1.68	\$0.00	\$0.00	\$0.00	\$40.30	\$54.31

Special Calculation Note : Other is Holiday

Ratio :

1 Journeyman to 1 Trainee

Jurisdiction (* denotes special jurisdictional note) :

MEDINA*, PORTAGE*, SUMMIT, WAYNE*

Special Jurisdictional Note : In Medina County the following townships are included: (Brunswick, Chatham, Granger, Guilford, Harrisville, Hinckley, Homer, Lafayette, Medina, Montville, Sharon, Spencer, Wadsworth, Westfield and York). In Portage County the following townships are included: (Atwater, Aurora, Brimfield, Deerfield, Franklin, Mantua, Randolph, Ravenna, Rootstown, Shalersville, Streetsboro and

Suffield). In Wayne County the following townships are included: (Baughman, Canaan, Chester, Chippewa, Congress, Green, Milton, and Wayne).

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 573 Inside

Change # : LCN02-2022ibLoc573in

Craft : Electrical Effective Date : 11/30/2022 Last Posted : 11/30/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuit y	Othe r	LECE T (*)	MIS C (*)		
Classification											
Electrician	\$38.70	\$7.90	\$7.11	\$0.90	\$0.00	\$3.87	\$1.16	\$0.00	\$0.00	\$59.64	\$78.99

Apprentices Indentured After 6/1/2004	Percent											
1st period	40.00	\$15.48	\$7.90	\$0.00	\$0.90	\$0.00	\$0.00	\$0.46	\$0.00	\$0.00	\$24.74	\$32.48
2nd period	45.02	\$17.42	\$7.90	\$0.00	\$0.90	\$0.00	\$0.00	\$0.52	\$0.00	\$0.00	\$26.74	\$35.45
3rd period	50.00	\$19.35	\$7.90	\$3.55	\$0.90	\$0.00	\$1.94	\$0.58	\$0.00	\$0.00	\$34.22	\$43.89
4th period	55.02	\$21.29	\$7.90	\$3.91	\$0.90	\$0.00	\$2.13	\$0.64	\$0.00	\$0.00	\$36.77	\$47.42
5th Period	60.00	\$23.22	\$7.90	\$4.27	\$0.90	\$0.00	\$2.52	\$0.70	\$0.00	\$0.00	\$39.51	\$51.12
6th period	65.02	\$25.16	\$7.90	\$4.62	\$0.90	\$0.00	\$2.52	\$0.75	\$0.00	\$0.00	\$41.85	\$54.43
7th period	70.00	\$27.09	\$7.90	\$4.98	\$0.90	\$0.00	\$2.71	\$0.81	\$0.00	\$0.00	\$44.39	\$57.94
8th period	75.02	\$29.03	\$7.90	\$5.33	\$0.90	\$0.00	\$2.90	\$0.87	\$0.00	\$0.00	\$46.93	\$61.45
9th period	80.00	\$30.96	\$7.90	\$5.69	\$0.90	\$0.00	\$3.10	\$0.93	\$0.00	\$0.00	\$49.48	\$64.96
10th period	90.00	\$34.83	\$7.90	\$6.40	\$0.90	\$0.00	\$3.48	\$1.04	\$0.00	\$0.00	\$54.55	\$71.97

Special Calculation Note : Other is National Electrical Benefit Fund.

Ratio :

1 Journeyman to 3 Apprentice
4 Journeyman to 6 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA*, GEAUGA*, MAHONING*,
PORTAGE*, TRUMBULL*

Special Jurisdictional Note : In Ashtabula County the following townships are included: (Colebrook, Wayne, Williamsfield, Orwell and Windsor). In Geauga County the following townships are included: (Auburn, Middlefield, Parkman and Troy). In Mahoning County the following township is included: (Milton). In Portage County the following townships are included: (Charlestown, Edinburg, Freedom, Hiram, Nelson, Palmyra, Paris and Windham). In Trumbull County the following townships are excluded: (Liberty and Hubbard).

Details :

Other: National Electrical Benefit Fund

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 573 Lt Commercial

Change # : LCN01-2023ibLoc573in

Craft : Electrical Effective Date : 01/18/2023 Last Posted : 01/18/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)			MIS C (*)
Classification												
Electrician	\$38.70		\$7.90	\$7.11	\$0.90	\$0.00	\$3.87	\$1.16	\$0.00	\$0.00	\$59.64	\$78.99
CE-3 12,001-14,000 Hrs	\$27.59		\$6.51	\$0.83	\$0.82	\$0.00	\$0.00	\$0.83	\$0.00	\$0.10	\$36.68	\$50.47
CE-2 10,001-12,000 Hrs	\$21.68		\$6.51	\$0.65	\$0.87	\$0.00	\$0.00	\$0.65	\$0.00	\$0.10	\$30.46	\$41.30
CE-1 8,001-10,000 Hrs	\$19.71		\$6.51	\$0.59	\$0.87	\$0.00	\$0.00	\$0.59	\$0.00	\$0.10	\$28.37	\$38.23
CW-4 6,001-8,000 Hrs	\$17.74		\$6.51	\$0.53	\$0.87	\$0.00	\$0.00	\$0.53	\$0.00	\$0.10	\$26.28	\$35.15
CW-3 4,001-6,000 Hrs	\$15.77		\$6.51	\$0.47	\$0.87	\$0.00	\$0.00	\$0.47	\$0.00	\$0.10	\$24.19	\$32.07
CW-2 2,001-4,000 Hrs	\$14.78		\$6.51	\$0.44	\$0.87	\$0.00	\$0.00	\$0.44	\$0.00	\$0.10	\$23.14	\$30.53
CW-1 0-2,000 Hrs	\$13.80		\$6.51	\$0.41	\$0.87	\$0.00	\$0.00	\$0.41	\$0.00	\$0.10	\$22.10	\$29.00
Apprentices Indentured After 6/1/2004	Percent											
1st period	40.00	\$15.48	\$7.90	\$0.00	\$0.90	\$0.00	\$0.00	\$0.46	\$0.00	\$0.00	\$24.74	\$32.48

2nd period	45.00	\$17.42	\$7.90	\$0.00	\$0.90	\$0.00	\$0.00	\$0.52	\$0.00	\$0.00	\$26.74	\$35.44
3rd period	50.00	\$19.35	\$7.90	\$3.55	\$0.90	\$0.00	\$1.94	\$0.58	\$0.00	\$0.00	\$34.22	\$43.89
4th period	55.00	\$21.29	\$7.90	\$3.91	\$0.90	\$0.00	\$2.13	\$0.64	\$0.00	\$0.00	\$36.77	\$47.41
5th Period	60.00	\$23.22	\$7.90	\$4.27	\$0.90	\$0.00	\$2.52	\$0.70	\$0.00	\$0.00	\$39.51	\$51.12
6th period	65.00	\$25.16	\$7.90	\$4.62	\$0.90	\$0.00	\$2.52	\$0.75	\$0.00	\$0.00	\$41.85	\$54.42
7th period	70.00	\$27.09	\$7.90	\$4.98	\$0.90	\$0.00	\$2.71	\$0.81	\$0.00	\$0.00	\$44.39	\$57.94
8th period	75.00	\$29.03	\$7.90	\$5.33	\$0.90	\$0.00	\$2.90	\$0.87	\$0.00	\$0.00	\$46.92	\$61.44
9th period	80.00	\$30.96	\$7.90	\$5.69	\$0.90	\$0.00	\$3.10	\$0.93	\$0.00	\$0.00	\$49.48	\$64.96
10th period	90.00	\$34.83	\$7.90	\$6.40	\$0.90	\$0.00	\$3.48	\$1.04	\$0.00	\$0.00	\$54.55	\$71.97

Special Calculation Note : Other is National Electrical Benefit Fund and *Misc is Administrative Collection Fee.

Ratio :

1 Journeyman to 3 Apprentices
4 Journeyman to 6 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA*, GEAUGA*, MAHONING*, PORTAGE*, TRUMBULL*

Construction Electrician and Construction Wireman Ratio

There shall be a minimum ratio of one inside Journeyman Wireman 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 : In Ashtabula County the following townships are included: (Colebrook, Wayne, Williamsfield, Orwell and Windsor). In Geauga County the following townships are included: (Auburn, Middlefield, Parkman and Troy). In Mahoning County the following township is included: (Milton). In Portage County the following townships are included: (Charlestown, Edinburg, Freedom, Hiram, Nelson, Palmyra, Paris and Windham). In Trumbull County the following townships are excluded: (Liberty and Hubbard).

Scope of Work for the Lt. Commercial Rate is as follows: Small medical clinics, stand-alone doctor and dentist offices with up to 600 amp services (not attached to a hospital),

Gas Stations/Convenience stores, fast food restaurants, franchised chain restaurants including independent bars and taverns, places of worship, funeral homes, Nursing homes, assisted living facilities and day-care facilities under 15,000 sq ft, small office, retail/wholesale facilities under 15,000 sq ft with less than 10 units attached, storage units, car washes, express hotels and motels (4 stories or less) without conference or restaurant facilities, residential units (subject to Davis Bacon Rates) small stand-alone manufacturing facilities when free standing and not part of a larger facility (less than 15,000 sq ft) solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with the 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 of one replacement of existing fixtures.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: **Glazier Local 181**

Change # : LCN02-2023ibLoc181

Craft : Glazier 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												
Glazier	\$33.97		\$8.72	\$11.58	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.72	\$71.70
Apprentice	Percent											
1st 6 months	50.02	\$16.99	\$8.72	\$1.02	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.18	\$35.68
2nd 6 months	50.02	\$16.99	\$8.72	\$1.02	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.18	\$35.68
3rd 6 months	50.02	\$16.99	\$8.72	\$5.19	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.35	\$39.85
4th 6 months	55.00	\$18.68	\$8.72	\$5.61	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.46	\$42.81
5th 6 months	60.00	\$20.38	\$8.72	\$6.02	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.57	\$45.76
6th 6 months	70.00	\$23.78	\$8.72	\$6.86	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.81	\$51.70
7th 6 months	80.00	\$27.18	\$8.72	\$7.69	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.04	\$57.62
8th 6 months	90.00	\$30.57	\$8.72	\$8.53	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.27	\$63.56

Special Calculation Note : No special calculations for this classification.

Ratio :

2 Journeymen to 1 Apprentice
3 Journeymen to 1 Apprentice Thereafter

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, ERIE*, GEAUGA, HURON, LAKE, LORAIN, MEDINA*, PORTAGE*, SUMMIT*

Special Jurisdictional Note : Start at the intersection of Route 305 and the eastern boundary line of Portage County. Follow Route 305 west onto Route 82, follow Route 82 west to the intersection of Routes 82,8 and 271, follow Route 271 south to Medina County line west to Route 94, follow Route 94 south to Route 303, follow Route 303 west to Route 252, follow Route 252 south to Route 18, follow Route 18 west to Route 301, follow 301

south to Route 162, follow Route 162 west to Route 58, follow Route 58 south to the Ashland County line, follow the Ashland County line. The eastern part of Route 4 north to Lake Erie is the jurisdiction of Local 181. Local 181 has the jurisdiction on all projects built on the property which borders on the above Routes and/or intersections, wherever a County line is the divider between Local 181 and another Union, the jurisdiction is only to the county line.

Details :

High Pay: All work is defined for the purpose of the agreement as being work which requires that the employee be supported by equipment that hangs from or suspends from the wall or roof of a building or structure. This work shall receive an additional \$1.50 per hour.

Prevailing Wage Rate Skilled Crafts

Name of Union: Ironworker Local 207

Change # : LCN01-2022sksLoc207

Craft : Ironworker Effective Date : 06/01/2022 Last Posted : 06/01/2022

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Ironworker	\$31.92	\$7.10	\$9.76	\$0.76	\$0.00	\$6.33	\$2.30	\$0.00	\$0.00	\$58.17	\$74.13
Layout Man and Sheeter	\$32.92	\$7.10	\$9.76	\$0.76	\$0.00	\$6.33	\$2.30	\$0.00	\$0.00	\$59.17	\$75.63

Apprentice	Percent											
1st Year	65.00	\$20.75	\$7.10	\$9.76	\$0.76	\$0.00	\$0.00	\$2.30	\$0.00	\$0.00	\$40.67	\$51.04
2nd Year	75.00	\$23.94	\$7.10	\$9.76	\$0.76	\$0.00	\$0.00	\$2.30	\$0.00	\$0.00	\$43.86	\$55.83
3rd Year	85.00	\$27.13	\$7.10	\$9.76	\$0.76	\$0.00	\$5.06	\$2.30	\$0.00	\$0.00	\$52.11	\$65.68
4th Year	95.00	\$30.32	\$7.10	\$9.76	\$0.76	\$0.00	\$5.70	\$2.30	\$0.00	\$0.00	\$55.94	\$71.11

Special Calculation Note : OTHER IS MEDICAL SAVINGS ACCOUNT/OUT OF POCKET MEDICAL EXPENSES: V.E.B.A.

Ratio :

4 Journeymen to 1 Apprentice

When 7 Journeymen are employed by a Contractor, the 8th person must be an Apprentice.

- 4 Journeymen to 1 Apprentice thereafter
- 2 Journeymen to 1 Apprentice (Ornamental work)
- 2 Journeyman to 1 Apprentice (Spining of cables/Suspension Bridges)

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA*, COLUMBIANA*, MAHONING, PORTAGE*, TRUMBULL

Special Jurisdictional Note : Portage County shall be as follows:

Hiram College and Ravenna Arsenal, the part of Portage County East of a line from

Middlefield to Shalersville to Deerfield. South of Route 6, starting at the Geauga County Line, proceeding East to State Route 11 on the East boundary and South of Interstate Route 90 to the Pennsylvania line.

Ashtabula County: All territory from the Geauga county line on the West boundary South of State Route 6 and East of State Route 11 and South of Interstate Route 90 to the Pennsylvania line.

Columbiana County: All territory east of a line from a point one (1) mile West of the intersection of Rt 224 and Rt 14 at Deerfield Circle, Deerfield, Ohio to a point where Columbiana County Rt 776 intersects with Columbian-Jefferson County line.

Details :

Reinforcing Iron Work Classification including but not limited to: all work in connection with field fabrication, handling (including loading and off-loading), sorting, cutting, bending, hoisting, placing, burning, welding and tying or securing of all materials used to reinforce concrete: all sizes and types of reinforcing steel (including composite material) wire mesh, hoops and stirrups, including mechanical splicing on reinforcing steel bar. The unloading, hoisting, placing and tying of all post tensioning cables. Also, wrecking of cores, wedging of the tendons, stressing, cutting and repairing. 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, pre-cast, pre-stressed and post-stressed concrete structures. Bridges and bridge rails, bridge viaducts, bucks, bulkheads, bumper and bumper post, canopies and uni-strut canopies, corrugated ferrous and non-ferrous sheets when attached to steel frames, columns, beams, bar joists, trusses, girders, 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 in their entirety which includes but not limited to erection, siding, roofing, gutters, insulation and downspouts.

Ornamental Iron Work but not limited to: all work in connection with field fabrication, handling including loading and off-loading, sorting, cutting, fastening, anchoring, bending, hoisting, placing, burning, welding and tying, dismantling of all materials used in miscellaneous iron or steel, from 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: Ironworker Local 550

Change # : LCN01-2023ibLoc550

Craft : Ironworker 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												
Ironworker	\$33.00		\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$55.68	\$72.18
Apprentice	Percent											
1st 6 months	65.00	\$21.45	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$44.13	\$54.85
2nd 6 months	69.00	\$22.77	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$45.45	\$56.84
3rd 6 months	73.00	\$24.09	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$46.77	\$58.81
4th 6 months	77.00	\$25.41	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$48.09	\$60.79
5th 6 months	81.00	\$26.73	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$49.41	\$62.78
6th 6 months	85.00	\$28.05	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$50.73	\$64.75
7th 6 months	90.00	\$29.70	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$52.38	\$67.23
8th 6 months	95.00	\$31.35	\$9.48	\$9.02	\$0.77	\$0.00	\$3.00	\$0.41	\$0.00	\$0.00	\$54.03	\$69.70

Special Calculation Note : OTHER IS: JOURNEYMAN UPGRADE AND WELLNESS FUND.

Ratio :

- 4 Journeymen to 1 Apprentice
- 1 Journeymen to 1 Apprentice, spinning of cable for suspension bridge
- 1 Journeymen to 1 Apprentice, ornamental work
- 2 Journeymen to 1 Apprentice, reinforcing work
- 1 Journeymen to 2 Apprentice, roadway

Jurisdiction (* denotes special jurisdictional note) :

- ASHLAND, CARROLL, COLUMBIANA*,
- COSHOCTON, HOLMES*, HURON, MAHONING*,
- MEDINA*, PORTAGE*, RICHLAND, STARK,
- SUMMIT*, TUSCARAWAS, WAYNE

Special Jurisdictional Note : The jurisdictional line between Local 17 and Local 550 is

determined as follows: All territory North of Old Route 224 line to be within the jurisdiction of Local 17. All territory South of Old Route 224 line is to be the jurisdiction of Local 550, except for everything within the City limits of Barberton which shall be under the jurisdiction of Local 17.

Details:

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 505

Change # : LCN02-2023ibLoc505

Craft : Drywall Finisher 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												
Painter Drywall Finisher	\$31.79		\$8.72	\$6.08	\$0.45	\$0.00	\$4.02	\$0.00	\$0.00	\$0.00	\$51.06	\$66.95
Apprentice	Percent											
1st 6 months	55.00	\$17.48	\$8.72	\$1.84	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.49	\$37.24
2nd 6 months	55.00	\$17.48	\$8.72	\$1.94	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.59	\$37.34
3rd 6 months	55.00	\$17.48	\$8.72	\$2.39	\$0.45	\$0.00	\$2.21	\$0.00	\$0.00	\$0.00	\$31.25	\$40.00
4th 6 months	65.00	\$20.66	\$8.72	\$2.49	\$0.45	\$0.00	\$2.61	\$0.00	\$0.00	\$0.00	\$34.93	\$45.27
5th 6 months	75.00	\$23.84	\$8.72	\$2.94	\$0.45	\$0.00	\$3.02	\$0.00	\$0.00	\$0.00	\$38.97	\$50.89
6th 6 months	85.00	\$27.02	\$8.72	\$3.04	\$0.45	\$0.00	\$3.42	\$0.00	\$0.00	\$0.00	\$42.65	\$56.16

Special Calculation Note : No special calculation for this classification.

Ratio :

2 Journeyman to 1 Apprentice
3 Journeyman to 1 Apprentice after 9 total tapers

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, GEAUGA, LAKE,
LORAIN, PORTAGE*, SUMMIT*

Special Jurisdictional Note : Portage & Summit North of the East-West Turnpike.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 707

Change # : LCN01-2021sksLoc707

Craft : Painter Effective Date : 12/31/2021 Last Posted : 12/22/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)			MIS C (*)
Classification												
Painter Brush Roll	\$28.11		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$46.66	\$60.71
Paperhanger	\$28.11		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$46.66	\$60.71
Sandblasting & Buffing	\$28.51		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$47.06	\$61.32
Spray Painting	\$28.81		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$47.36	\$61.76
REPAINT Brush Roll & Paperhanger	\$26.61		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$45.16	\$58.46
REPAINT Sandblasting & Buffing	\$27.01		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$45.56	\$59.07
REPAINT Spray Painting	\$27.31		\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$45.86	\$59.51
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Apprentice - Painter	Percent											
1st 6 months	45.00	\$12.65	\$7.92	\$1.59	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.56	\$28.88
2nd 6 months	50.00	\$14.06	\$7.92	\$1.64	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$24.01	\$31.04
3rd 6 months	55.00	\$15.46	\$7.92	\$2.13	\$0.40	\$0.00	\$2.28	\$0.00	\$0.00	\$0.00	\$28.19	\$35.92
4th 6 months	60.00	\$16.87	\$7.92	\$2.17	\$0.40	\$0.00	\$2.49	\$0.00	\$0.00	\$0.00	\$29.85	\$38.28

5th 6 months	65.00	\$18.27	\$7.92	\$2.52	\$0.40	\$0.00	\$2.70	\$0.00	\$0.00	\$0.00	\$31.81	\$40.95
6th 6 months	70.00	\$19.68	\$7.92	\$2.56	\$0.40	\$0.00	\$2.91	\$0.00	\$0.00	\$0.00	\$33.47	\$43.31
7th 6 months	75.00	\$21.08	\$7.92	\$3.45	\$0.40	\$0.00	\$3.11	\$0.00	\$0.00	\$0.00	\$35.96	\$46.50
8th 6 months	80.00	\$22.49	\$7.92	\$3.45	\$0.40	\$0.00	\$3.32	\$0.00	\$0.00	\$0.00	\$37.58	\$48.82

Special Calculation Note : Apprentice pay based on percentage of above appropriate classification.

Ratio :

1 Apprentice to 1 Journeyman

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, PORTAGE*, SUMMIT*

Special Jurisdictional Note : Portage & Summit North of the East-West Turnpike.

Details :

Application of Catalytic materials under class 3 hazardous per MSDS - .65 per hour above the Job Classification basic hourly rate.

Application of Catalytic materials under class 4 hazardous per MSDS - 1.00 per hour above the Job Classification basic hourly rate.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 707 HvyHwy

Change # : LCN01-2021sksLoc707Ind

Craft : Painter Effective Date : 12/31/2021 Last Posted : 12/22/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)	MIS C (*)		
Classification											
Painter Bridge Class 1 Bridge Blaster	\$34.37	\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$52.92	\$70.10
Class 2 Bridge Painter, RiggerContainment Builder, Spot Blaster	\$31.37	\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$49.92	\$65.60
Class 3 Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control Boat Person, Driver (0-5 Years Exp.)	\$24.37	\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$42.92	\$55.10
Class 3 Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control Boat Person, Driver (5 Plus Years Exp.)	\$27.37	\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$45.92	\$59.60
Class 4 Concrete Sealing, Concrete Blasting/Power Washing/Etc	\$23.37	\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$41.92	\$53.60

Class 5 Quality Control, Quality Assurance, Traffic Safety, Competent Person	\$27.37	\$7.92	\$6.08	\$0.40	\$0.00	\$4.15	\$0.00	\$0.00	\$0.00	\$45.92	\$59.60
Apprentice - Painter	Percent										
1st 6 months	45.00	\$15.47	\$7.92	\$1.59	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$25.38	\$33.11
2nd 6 months	50.02	\$17.19	\$7.92	\$1.64	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$27.15	\$35.75
3rd 6 months	55.00	\$18.90	\$7.92	\$2.13	\$0.40	\$0.00	\$2.28	\$0.00	\$0.00	\$31.63	\$41.09
4th 6 months	60.00	\$20.62	\$7.92	\$2.17	\$0.40	\$0.00	\$2.49	\$0.00	\$0.00	\$33.60	\$43.91
5th 6 months	65.00	\$22.34	\$7.92	\$2.52	\$0.40	\$0.00	\$2.70	\$0.00	\$0.00	\$35.88	\$47.05
6th 6 months	70.00	\$24.06	\$7.92	\$2.56	\$0.40	\$0.00	\$2.91	\$0.00	\$0.00	\$37.85	\$49.88
7th 6 months	75.00	\$25.78	\$7.92	\$3.45	\$0.40	\$0.00	\$3.11	\$0.00	\$0.00	\$40.66	\$53.55
8th 6 months	80.00	\$27.50	\$7.92	\$3.45	\$0.40	\$0.00	\$3.32	\$0.00	\$0.00	\$42.59	\$56.33

Special Calculation Note : Apprentice pay based on percentage of above appropriate classification.

Ratio :

1 Apprentice to 1 Journeyman

Jurisdiction (* denotes special jurisdictional note) :

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, PORTAGE*, SUMMIT*

Special Jurisdictional Note : Portage & Summit North of the East-West Turnpike.

Details :

Painter Bridge Class 2 is Defined as; Bridge Painter, Rigger, Containment Builder

Application of Catalytic materials under class 3 hazardous per MSDS - .65 per hour above the Job Classification basic hourly rate.

Application of Catalytic materials under class 4 hazardous per MSDS - 1.00 per hour above the Job Classification basic hourly rate.

* Concrete Sealing: on highway work, scaling of concrete surfaces, the treating and sealing of bridge decks, the painting and staining of concrete, including the abutments, barricades, noise barriers, lane dividers, etc.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 841

Change # : LCN01-2021sksLoc841

Craft : Painter Effective Date : 11/17/2021 Last Posted : 11/17/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuit y	Othe r	LECE T (*)	MIS C (*)		
Classification											
Painter Brush Roll	\$28.18	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$43.53	\$57.62
Paperhanger	\$28.18	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$43.53	\$57.62
Painter Spray Gun Operator Any and All Coatings)	\$29.03	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$44.38	\$58.90
Swing Scaffold, Bosum Chair, & Window Jacks	\$28.93	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$44.28	\$58.75
Sandblast, Painting of Standpipes, etc. from Scaffolds Open Structural Steel, Standpipes and Water Towers	\$29.43	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$44.78	\$59.50
Epoxy Application	\$28.83	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$44.18	\$58.60
Synthetic Exterior, Lead Abatement,	\$29.43	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$44.78	\$59.50

Asbestos Removal												
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Apprentice	Percent											
1st Year	53.24	\$15.00	\$6.85	\$2.72	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$25.57	\$33.07
2nd Year	60.00	\$16.91	\$6.85	\$3.14	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$27.90	\$36.35
3rd Year	70.00	\$19.73	\$6.85	\$3.57	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$31.15	\$41.01
4th Year	80.00	\$22.54	\$6.85	\$4.34	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$34.73	\$46.01

Special Calculation Note : Apprentice pay based on percentage of above appropriate classification.

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, COSHOCTON, HOLMES, MEDINA, PORTAGE*, STARK, SUMMIT*, TUSCARAWAS, WAYNE

Special Jurisdictional Note : Summit Cnty: South of and including the Ohio Turnpike, Portage Cnty: North to and including the Ohio Turnpike

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 841 (Finisher/Taper)

Change # : LCN01-2021sksLoc841

Craft : Drywall Finisher Effective Date : 11/17/2021 Last Posted : 11/17/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECE T (*)	MIS C (*)		
Classification											
Painter Drywall Finisher/PainterTaper	\$29.43	\$6.85	\$7.50	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$44.78	\$59.50

Apprentice	Percent											
1st Year	50.98	\$15.00	\$6.85	\$2.72	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$25.57	\$33.08
2nd Year	65.00	\$19.13	\$6.85	\$3.52	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$30.50	\$40.06
3rd Year	80.00	\$23.54	\$6.85	\$4.34	\$0.35	\$0.00	\$0.65	\$0.00	\$0.00	\$0.00	\$35.73	\$47.51

Special Calculation Note : Apprentice pay based on percentage of above appropriate classification.

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

CARROLL, COSHOCTON, HOLMES, MEDINA, PORTAGE*, STARK, SUMMIT*, TUSCARAWAS, WAYNE

Special Jurisdictional Note : Summit County South of and including the Ohio Turnpike, Portage Cnty: North of and including the Ohio Turnpike

Details :